



The real cost of HLB in Florida

By Ariel Singerman

This article summarizes the major changes in the cost of production for processed oranges in Florida since the outbreak of huanglongbing (HLB). To deal with the disease, growers have significantly changed their cultural practices. Those changes have had a considerable impact on the cost of production per acre.

NOMINAL COSTS VS. REAL COSTS

However, given that inflation also causes the overall level of prices to increase over time, economists use the

terms “nominal” and “real” dollars to refer to the current dollar value and the constant dollar value, respectively. The difference between the two is that the real dollar value denotes an amount

that has been adjusted for inflation. So, by taking inflation into account, estimates can be provided of the real increase in the cost of production per acre to deal with HLB.

Figure 1 shows the annual nominal and real cultural costs of production for processed oranges in Southwest Florida on a per acre basis. The nominal cost of production per acre (denoted by blue bars) increased from \$880 in 2003–04 to \$1,875 in 2017–18, which is a \$995 per acre increase during that period.

While such an increase was mainly driven by growers using more foliar sprays and fertilizer, part of the increase was due to inflation. So, to quantify the increase in cost due to the change in cultural practices alone, focus instead on the real cost of production (denoted by orange bars in Figure 1), which increased from \$1,212 in 2003–04 to \$1,875 in 2017–18. Thus, the real increase in cost of production per acre during that period was \$663. Most of the increase can be attributed to growers’ efforts to manage HLB.

COSTS PER ACRE VS. PER BOX

Interestingly, however, the maximum increase in the real cost of production per acre relative to 2003–04 occurred in 2014–15, for a total of \$908. But, since 2015–16, growers have been spending less, in real terms, in their groves (as denoted by the increasingly smaller orange bars in Figure 1). So, why has the real cost of production per acre been decreasing lately? This

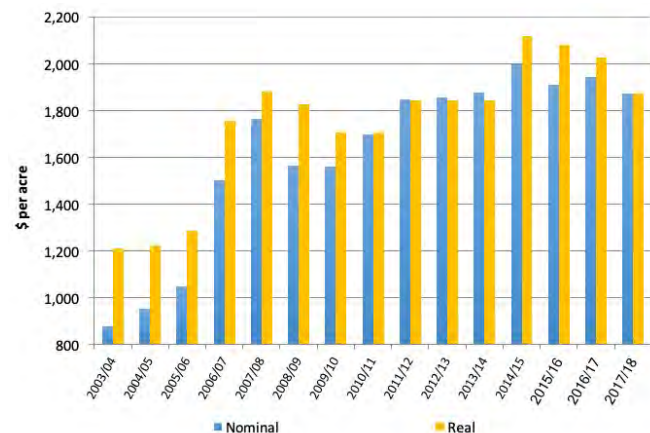


Figure 1. Nominal and real cultural costs of production per acre for processed oranges in Southwest Florida. Real cultural costs of production are computed by using the Producer Price Index for 2018 as a basis.

Source: University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Citrus Research and Education Center (CREC), multiple annual cost of production reports

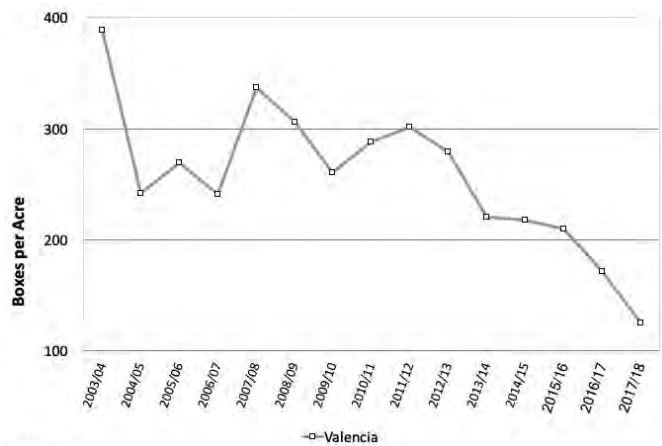


Figure 2. Valencia orange yields in Florida

Source: U.S. Department of Agriculture-National Agricultural Statistics Service

finding can be explained by examining what has been happening with yield.

Figure 2 (page 10) shows the average yield statewide for Valencia oranges. Despite the (average) high level of growers' spending, yield has been decreasing — particularly since 2015–16. According to economic theory, a grower will choose the optimal amount of an input to make the benefit of using one additional unit equal to its cost. But the yield trend shows that the additional units of input did

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not translate into an increase in yield. Therefore, the decision of growers to decrease their expense on inputs is a rational economic choice.

It is also interesting to note that even though the increase in the cost of production per acre has been significant, the increase in the cost of production per box has been even higher. Figure 3 (page 12) shows that the real cultural cost of production, on a per box basis, went up from \$2.83 in 2003–04 to \$15.37 in 2017–18, which represents a 443 percent increase.

Given that Hurricane Irma impacted yield in 2017–18, a more appropriate comparison is to 2016–17, when the real cost of production per box was \$10.85. This still represents a 283 percent increase relative to 2003–04.

The reason for the higher percentage increase in the cost of production per box relative to per acre is due to the simultaneous increase in cost per acre and decrease in yield per acre. During the same period, on-tree prices per box increased (due to the decrease in supply), but they did so by a smaller percentage. Thus, the greater increase in cost per box relative to price has resulted in a lack of profitability for the

A proud tradition

By Rick Dantzler, CRDF chief operating officer



The great Jim Ellis suggested that I devote a few columns to some of the innovative things Florida citrus growers are doing to grow citrus successfully in the HLB era. I thought that was a fine idea, especially since it was coming from a member of the Florida Citrus Hall of Fame.

Kicking off this series is an article on the grove operations of Southern Gardens Citrus, an entity that farms 13,000 acres of Florida sunshine. Jim Snively serves as the company's vice president of grove operations.

Snively's citrus pedigree is about as linear as it could be, going all the way back to his great-grandfather, John A. Snively, one of the patriarchs of the Florida citrus industry. The senior Snively honeymooned in Winter Haven, liked what he saw and moved there in 1911. By 1914, he was well immersed in the citrus industry and on his way to owning 10,000 acres of Florida groves.

From great-grandfather, to grandfather, to father to son, Snively never knew life apart from citrus. Graduating from Florida Southern College with a degree in citrus management, he was well prepared to start his work with Southern Gardens in 2002.

"There's no big secret to what we're doing," Snively says. "We use a combination of fertigation and dry fertilizer. We believe we can sustain a high level of production with proper nutrition and psyllid control. We've reduced our psyllid spraying pretty significantly, from approximately once a month to five or six times a year on mature trees, and we use sprays that are softer on beneficials. We've also cut our spraying on young trees by about half."

Southern Gardens conducts a lot of its own research and believes it has found the "sweet spot," as Snively describes it, at a planting density of between 250 and 300 trees per acre on roughly an 8-foot by 22-foot set. Compost is put in prior to planting and more is added later.

As for rootstocks, "We plant 942 when we can get it, but we also plant a lot of Kuharske and Volk," says Snively.

With the newest citrus processing facility in Florida, Southern Gardens grows only juice oranges, primarily Valencias and Hamlins, with some Vernia and Valquarius.

The business will discontinue its 250-acre bactericide trials after one more year. "Results have not shown any significant differences," Snively notes.

When asked about Southern Gardens research in developing a genetically modified organism by using a spinach defensin gene, Snively says he is "encouraged," but is even more excited about using the tristeza virus to deliver the spinach defensin into the phloem, a sentiment echoed by Tim Eyrich, Southern Gardens vice president of research and product development.

"We're happy to share anything we're doing with the industry," Snively remarks. This generous attitude is something I have noticed about Southern Gardens and its parent company, U.S. Sugar, for decades. Whether it's serving on a committee, helping to solve a public policy issue or supporting worthy causes, employees never turn down reasonable requests. It's a tradition that I believe Jim's great grandfather would be proud to see him continuing.



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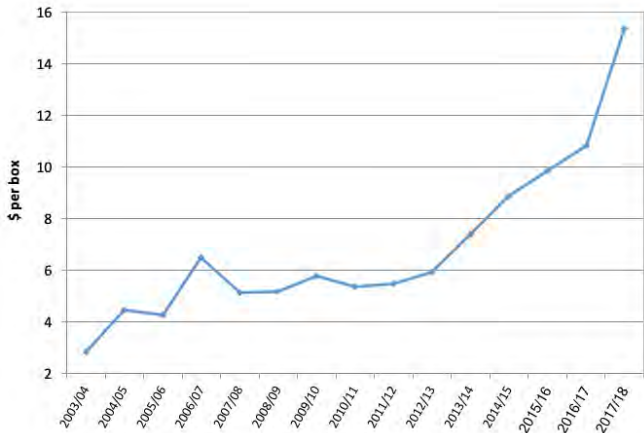


Figure 3. Real cost of production per box for processed Valencia oranges in Southwest Florida
Source: Ariel Singerman, UF/IFAS CREC, multiple annual cost of production reports

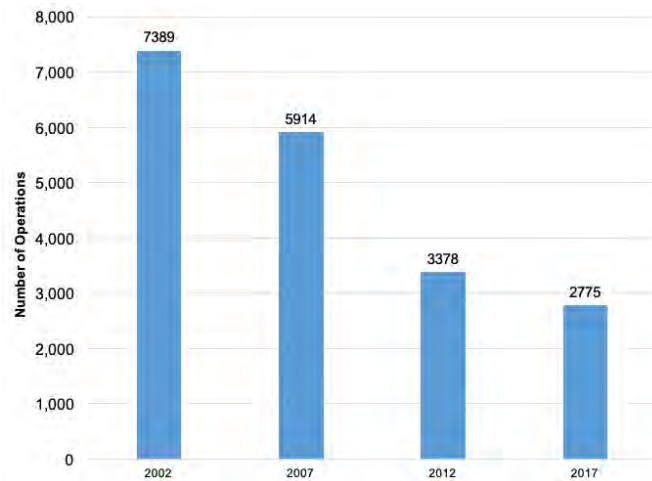


Figure 4. Number of citrus operations in Florida
Source: U.S. Department of Agriculture-National Agricultural Statistics Service

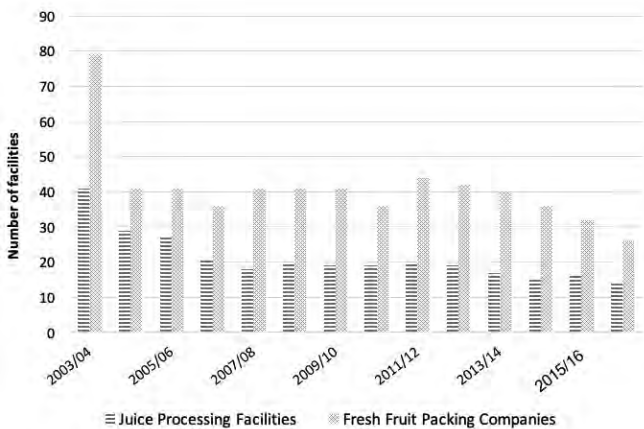


Figure 5. Number of juice processing facilities and packinghouses in Florida
Source: Florida Department of Agriculture and Consumer Services

average grower, particularly during the last few seasons.

INDUSTRY SHRINKAGE

Because of the challenges the industry has been facing, it is not surprising that citrus bearing acres in Florida have decreased from 679,000 in 2003–04 to 402,000 in 2017–18. The decrease in area also denotes the reduction in the number of citrus growers across the state, which went down from 7,389 in 2002 to 2,775 in 2017 (Figure 4, page 12).

The downsizing has occurred not only at the grower level, but also at the industry level. Figure 5 (page 12) shows the number of juice-processing facilities decreased from 41 in 2003–04 to 14 in 2016–17. The number of packing-houses decreased from 79 to 26 during the same period.

The number of juice-processing facilities in Florida decreased from 41 in 2003–04 to 14 in 2016–17.

SUMMARY

The real cultural cost to manage HLB in processed orange groves in Florida is estimated to be \$663 per acre, which represents a 67 percent increase compared to pre-HLB levels. However, and perhaps more importantly, the real cultural cost of production per box increased by 283 percent. Because of the multiple challenges (chiefly, those imposed by HLB) growers have been facing, their numbers have decreased substantially since 2002.

It is good news that citrus production in Florida is up this season not only relative to last season (in which Hurricane Irma hit), but also relative to 2016–17. However, issues such as the decreasing trend in pounds solid per box are evidence that the challenges posed by HLB continue. 🍊

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