

Lower Supply and Higher Demand: Why Aren't Processed Oranges Prices Higher?

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According to the USDA, production of processed oranges in Florida will decline again this season (Figure 1). If such a forecast materializes, production will have declined by approximately 80% since HLB was first found in the state. According to the Florida Department of Citrus (FDOC), as a consequence of COVID-19, orange juice demand has increased (<https://citrusindustry.net/2021/01/08/fdoc-update-oj-sales-supply-and-demand/>). Thus, following economic theory, *everything else constant*, lower supply and higher demand should lead to higher prices. Prices have indeed increased in 2020/21 relative to the very low level during 2019/20, when early and mid-season oranges spot prices were as low as \$1 per pound solids and Valencias at \$1.25 per pound solids. While early price offers in 2021/22 indicate prices are slightly up relative to last season (Figure 2), the level of prices is concerning because given the current average level of yield in Florida, prices are not high enough for the average grower to break even (<https://crec.ifas.ufl.edu/economics/southwest-florida/>). Moreover, the situation is worsened this season due to the increase in the cost of chemicals (<https://citrusindustry.net/2021/11/04/top-grower-concerns-input-costs-and-availability/>). If unable to make a profit, more growers will be forced to exit the industry. The key to understanding why prices are not higher (spoiler: it is not that economic theory does not work) is that the assumption “*everything else constant*” does not hold.

Figure 1. Orange Production in Florida

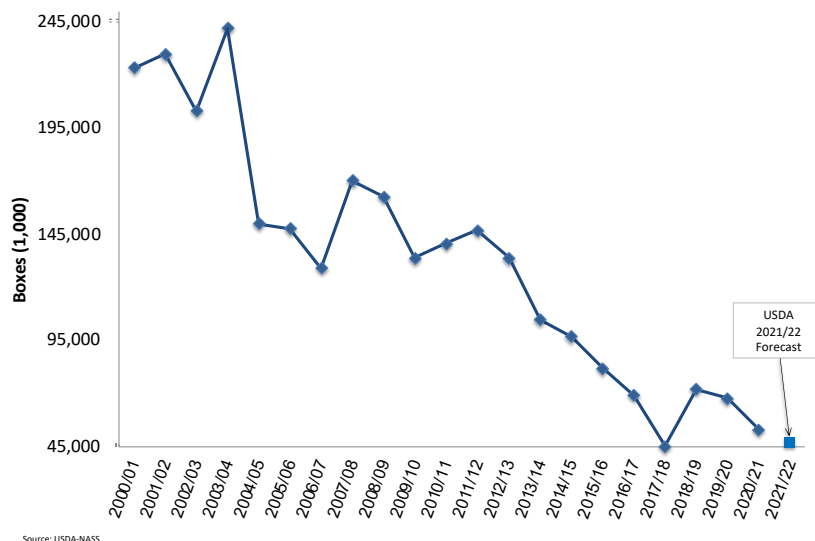
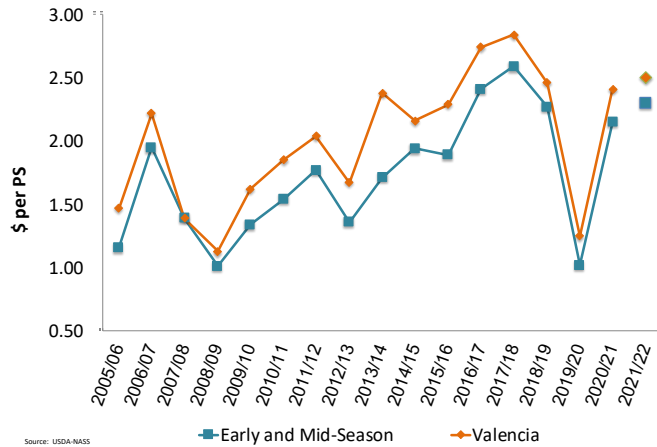


Figure 2. Average Spot Delivered-In Prices for Processed Oranges in Florida by Season



Major consequences of HLB include its negative impact on yield —mainly due to fruit drop (Figure 3) — and on the quality of the juice. In fact, fruit drop has a compounding negative effect on quality. As a consequence of fruit dropping prematurely from the tree, growers have the incentive to harvest at an earlier date (<https://citrusindustry.net/2021/06/14/fruit-drop-when-to-harvest/>), but harvesting earlier implies that the percentage of Brix is lower (Figure 4); lower Brix then translate into lower pound solids (Figure 5), which is the basis on which growers are paid for their fruit. Recently, quality has decreased so significantly that it is now more challenging for Florida oranges to meet the USDA minimum quality standard for not-from-concentrate orange juice of 10.5 Brix (<https://citrusindustry.net/2021/09/28/hlb-the-problem-for-processors>). Consequently, Florida Citrus Mutual asked for the standard to be lowered to 10 Brix; the FDA replied it would consider allowing for lower Brix, but it would require the labeling of such a lower quality juice (<https://citrusindustry.net/2021/10/27/brix-decision-disappoints-florida-citrus-mutual/>).

Figure 3. Average Valencia Oranges Yield and Fruit Drop in Florida

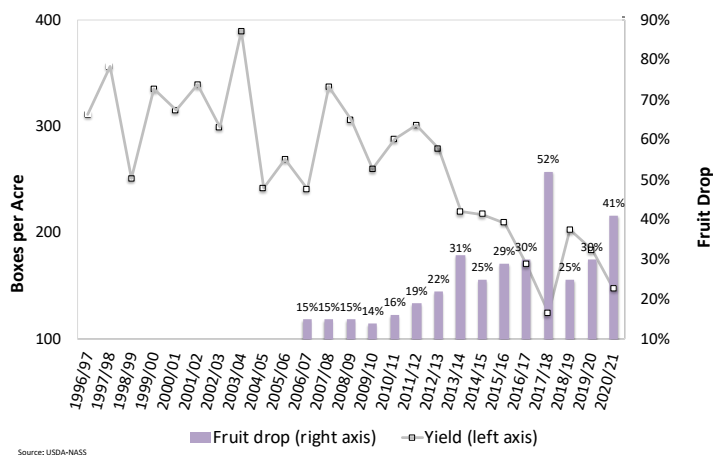


Figure 4. Average Valencia Oranges Solids (Brix) in Florida by Date and Season

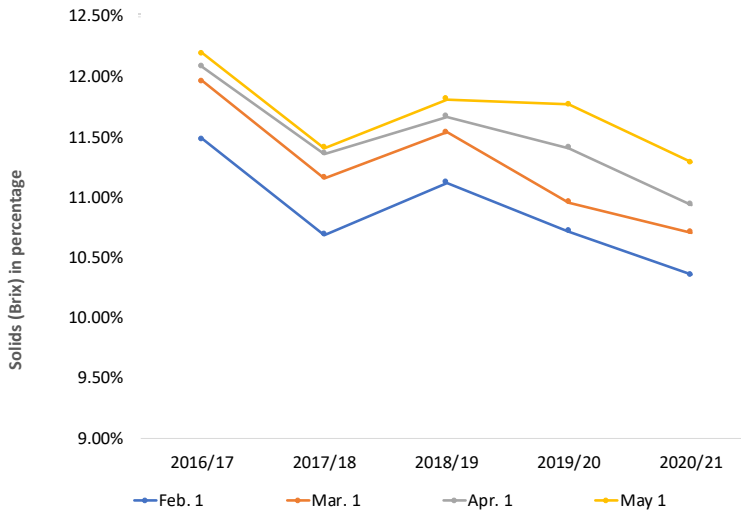
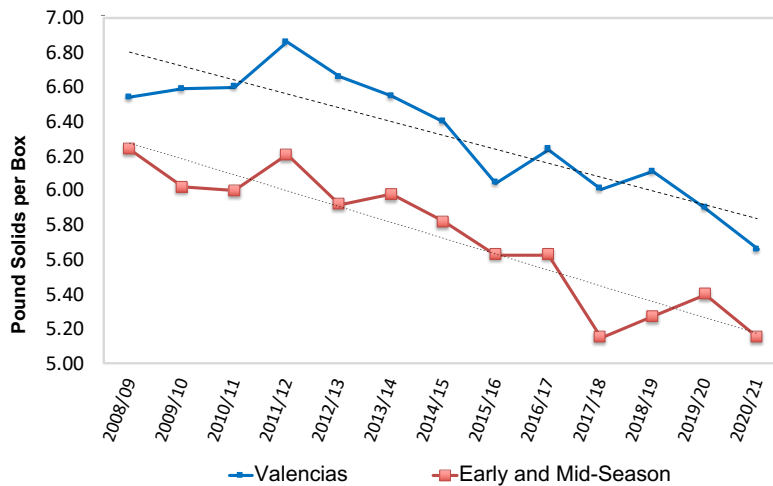


Figure 5. Average Pounds Solids per Box in Florida by Season



Source: FDOC Processor reports

As a consequence of both lower yield per acre and reduced pound solids, orange juice imports from Brazil and Mexico have been increasing, particularly in recent years. While there is a heated debate about the impact of imports on Florida growers' profitability, in the case of the Florida citrus industry, specifically for the case of processed oranges, imports have been not only necessary for processors but also beneficial for some growers. This is because higher quality imported juice is blended with Florida juice to improve quality and meet the USDA standard. Had imports been restricted, the quantity of orange juice that processors would have been able to sell as not-from-concentrate would have

been lower. Therefore, the fruit from Florida that has lower quality would have reaped a lower price (i.e., that for concentrate juice).

Summary

Production of processed oranges in Florida has decreased almost every year since HLB was found. Driven by the outbreak of COVID-19, demand for orange juice has increased in recent months. Even though prices have increased as a consequence of such market dynamics, they are not at break-even level for the average grower. The culprit for prices not being at a higher level is that the quality of the fruit in Florida has been declining significantly as a consequence of HLB. Thus, processors have been increasingly blending higher quality imported juice with Florida juice to meet the USDA standard. However, a concern that arises from the situation described above is: what volume of Florida fruit is needed for processors to keep their plants open? If fruit quality keeps declining and imports rising, processing plants might be forced to close down; once closed, it is unlikely that they would reopen, making outlets for Florida processed fruit scarcer and prices (likely) lower for growers.