

Cost of Production for Fresh Market Grapefruit Grown in Indian River, 2023/24

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In this article, I present the cost of production per acre for growing fresh grapefruit in the Indian River region during 2023/24. The estimates provided herein are based on the responses of growers to a mail survey we conducted to obtain the costs of their production programs in 2022/23. The estimates were updated when appropriate to reflect the costs in 2023/24, as explained when appropriate below. Surveying growers regarding their costs allows reporting representative estimates of the current grove caretaking practices, input combinations, and costs in commercial operations. This is particularly important because, since HLB was found, growers have been modifying their practices from year to year in an attempt to cope with the disease. However, the cost estimates below do not represent any individual operation. Instead, their purpose is to serve as a benchmark for the Florida citrus industry.

The number of acres managed by the combined operations of the sample of participating growers accounted for approximately 9,500 acres; representing 72% of the acreage devoted to grapefruit in Indian River, which was estimated at 13,110 (USDA-NASS, 2023). The questionnaire asked growers to provide annual, per acre costs by program for a “typical” irrigated, mature grapefruit grove (10+ years old) with fruit marketed to the fresh market, including costs related to their tree replacement program.

Table 1 shows the cultural costs of production by program. Such estimates include both the costs of materials and their application. From Table 1, the total for weed management – which includes chemical and mechanical mowing as well as herbicides – was \$278.17 per acre. At \$1,415.43 per acre, foliar sprays represented the largest production cost. Such cost includes an increase of \$6 in the cost of each ground application with respect to the previous season based on the annual custom rates charges survey (Singerman 2023, 2024). Fertilizer was the second largest expense at \$512.00 per acre. The expense of oxytetracycline injection was \$201.73 per acre, down \$21.60 per acre relative to last season based on the estimates from Singerman (2024b). The expense for pruning was \$82.83 per acre, while that for irrigation was \$253.63 per acre. The cost of the fuel to operate the pump was updated by using the average change in the cost of diesel from 2022/23 to 2023/24, which decreased by 11% according to data from U.S. EIA (2025). The cost per acre of canker control was \$66.67 and that of sub-contracted labor \$50.00. Adding all the costs listed above, the cultural cost of growing fresh grapefruit in the Indian River during 2023/24 without tree replacement was \$2,860.46 per acre. Growers were also asked to provide details regarding their reset practices, but are currently not re-planting.

Figure 1 depicts a double pie chart. The larger pie shows the cost of each program as well as the percentage relative to the cultural production costs with tree replacement. The smaller pie in Figure 1 provides greater detail regarding the individual components included in foliar sprays. Insecticides accounted for \$269 per acre and represented 9% of the cultural cost of production; fungicides accounted for \$226 per acre (8%); foliar nutritionals for \$262 per acre (9%); bactericides for \$24 per acre (1%); ground application

of materials for \$519 per acre (18%); biostimulants \$47 per acre (2%), and adjuvants \$69 per acre (2%).

In addition to cultural costs, growers typically have to incur in other costs when managing their groves; those costs include management, regulatory, and opportunity costs, which in 2023/24 accounted for \$868.14 per acre. Thus, table 2 shows that the estimated total cost of production for fresh grapefruit growers in Indian River during 2023/24 was \$3,728.61 per acre.

Summary

This article presents a summary of the costs of production for fresh market grapefruit grown in the Indian River region during 2023/24. The methodology to collect the data consisted of surveying growers directly to closely reflect growers' costs in the era of HLB. The total cost of production for fresh grapefruit in Indian River during 2023/24 was \$3,728.61 per acre. Typical users of the estimates presented herein include growers and consultants, who use them as a benchmark; property appraisers, who use them to compute the taxes for property owners; and researchers, who use the estimates to evaluate the economic feasibility of potential new technologies.

References:

- Singerman, A. 2024. Summary of 2023/24 Central Florida (Ridge) and Indian River-Southwest Florida Citrus Custom Rate Charges. Available at: https://crec.ifas.ufl.edu/media/crecifasufledu/economics/docs/2023_24_Caretaker_Rates.pdf
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- Singerman, A. 2024b. The Economics of OTC Applications. Presented at Citrus Expo 2024. Available at: https://crec.ifas.ufl.edu/media/crecifasufledu/citrus-research/docs/expo2024/docs/expo2024_Singerman.pdf
- USDA-NASS. 2023. Commercial Citrus Inventory 2022/23.
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Table 1. Cultural Costs of Production per Acre for Fresh Market Grapefruit Grown in Indian River, Florida, 2023/24

Costs represent a mature grove (10+ years old) including resets	Number of Applications	Materials Cost per acre (\$)	Application Cost per acre (\$)	Total Cost per acre (\$)
Production/Cultural Costs				
<u>Weed Management</u>				
Mowing (Chemical & mechanical)	6	0.83	62.33	63.17
Herbicides	4	140.33	74.67	215.00
Total Weed Management Costs				278.17
<u>Foliar Sprays</u>				
Insecticides		269.00		269.00
Fungicides		226.00		226.00
Nutritionals		262.33		262.33
Adjuvants		68.50		68.50
Biostimulants		46.58		46.58
Bactericides		23.68		23.68
Application:				
Ground	10		519.33	519.33
Total Foliar Sprays Costs				1,415.43
Bactericides Injection	1	88.33	113.40	201.73
Total Bactericides Injection				201.73
<u>Fertilizer</u>				
Ground/Dry Fertilizer	3	287.00	36.00	323.00
Fertigation/Liquid Fertilizer	12	165.67	23.33	189.00
Total Fertilizer Costs				512.00
<u>Pruning</u>				
Topping, Hedging & Skirting	1		82.83	82.83
Total Pruning Costs				82.33
<u>Irrigation</u>				
Irrigation System ¹				191.33
Fuel for pump				62.30
Total Irrigation Costs				253.63
Canker Control Costs ²				66.67
Grove Sub-contracted Labor				50.00
Total Production/Cultural Costs without Tree Replacement				2,860.46
Tree Replacement (0 trees):				
Total Tree Replacement Costs				0.00
Total Production/Cultural Costs with Tree Replacement				2,860.46

¹ Irrigation system includes: Maintenance and repairs to emitters, clean ditches, ditch and canal maintenance, water control

² Canker control includes: Clean blocks before certification and harvesting; inspections before "Canker Free" certifications; mandatory citrus canker decontamination costs

Table 2. Total Costs of Production per Acre for Fresh Market Grapefruit Grown in Indian River, Florida, 2023/24

	Cost per acre (\$)
<u>Total Cultural Cost of Production</u>	2,860.46
<u>Other Costs</u>	
Interest on Operating (Cultural) Costs	143.02
Management Cost	162.63
Property Tax/Water Management Tax	18.50
Fly protocol	35.00
Water Drainage District Assessment	107.00
Interest on Average Capital Investment	401.99
Total Other Costs	868.14
Total Grower Costs	3,728.61

Figure 1. Cultural Costs of Production (in dollars per acre) for Fresh Market Grapefruit Grown in Indian River, Florida, 2023/24

