

Early Economic Performance of Selected Rootstocks in Commercial Settings

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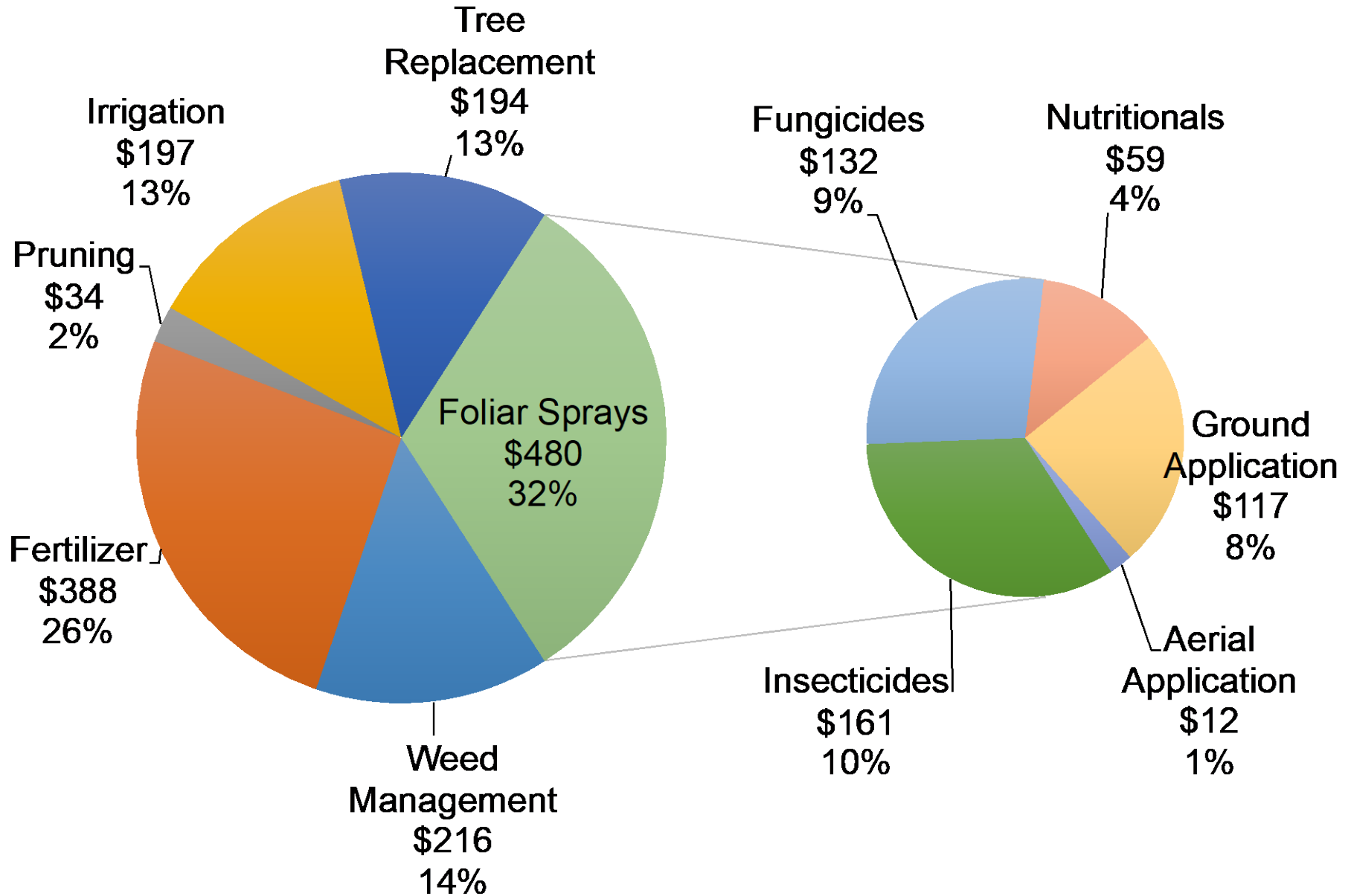
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Cultural Cost of Production per Acre for Processed Oranges in Southwest Florida, 2020/21

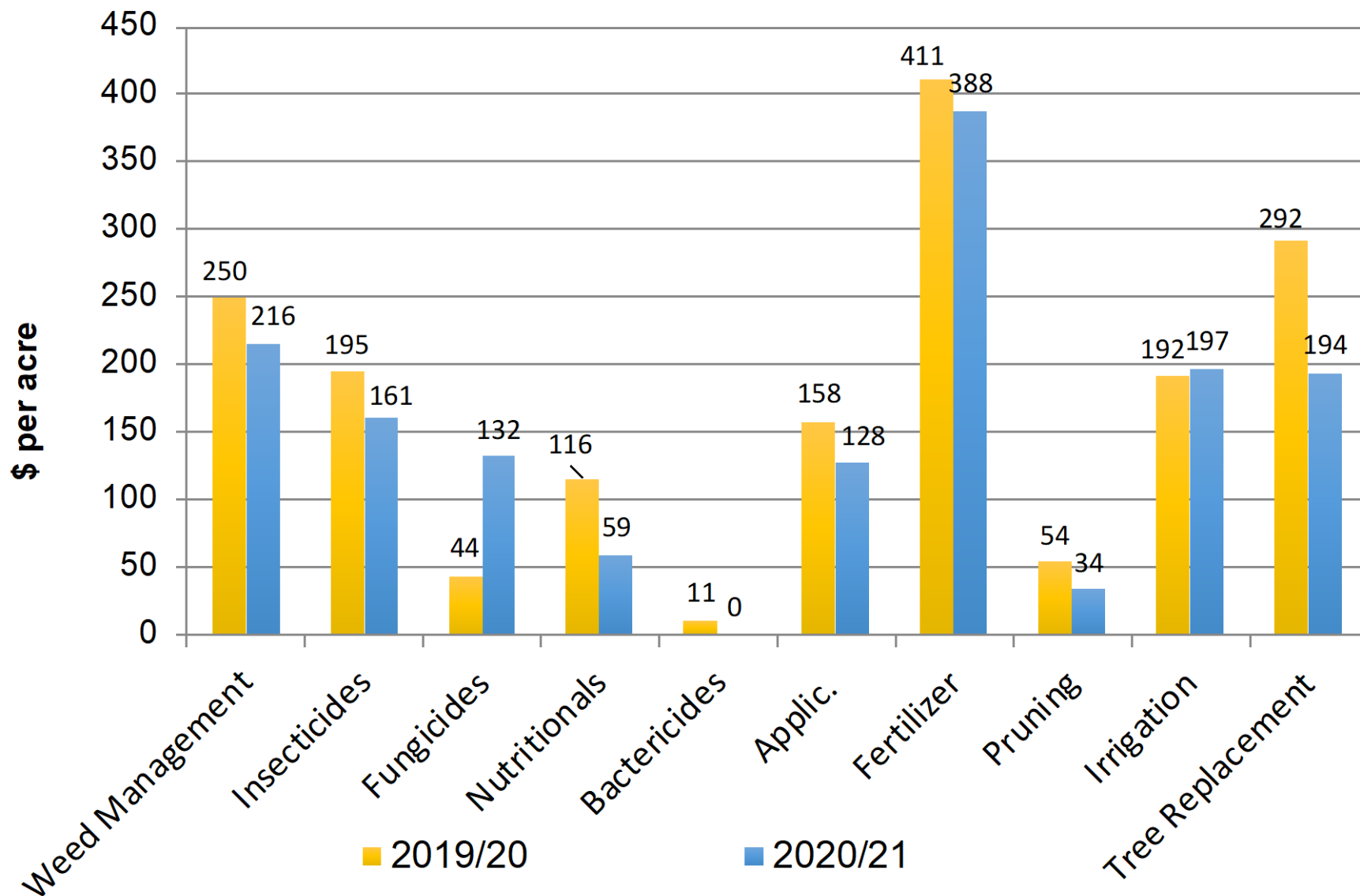
Costs represent a mature grove (10+ years old) including resets

	Cost per acre (\$)
Weed Management	215.64
Foliar Sprays	479.71
Fertilizer	387.96
Pruning (topping, hedging, chop/mow Brush)	33.58
Irrigation ¹	197.15
Total Cultural Costs without Tree Replacement	1314.04
Tree Replacement (6 trees)	193.75
Total Cultural Costs with Tree Replacement	1507.79

Cultural Cost of Production per Acre for Processed Oranges in Southwest Florida by Program



Cultural Cost of Production per Acre for Processed Oranges in Southwest Florida by Program

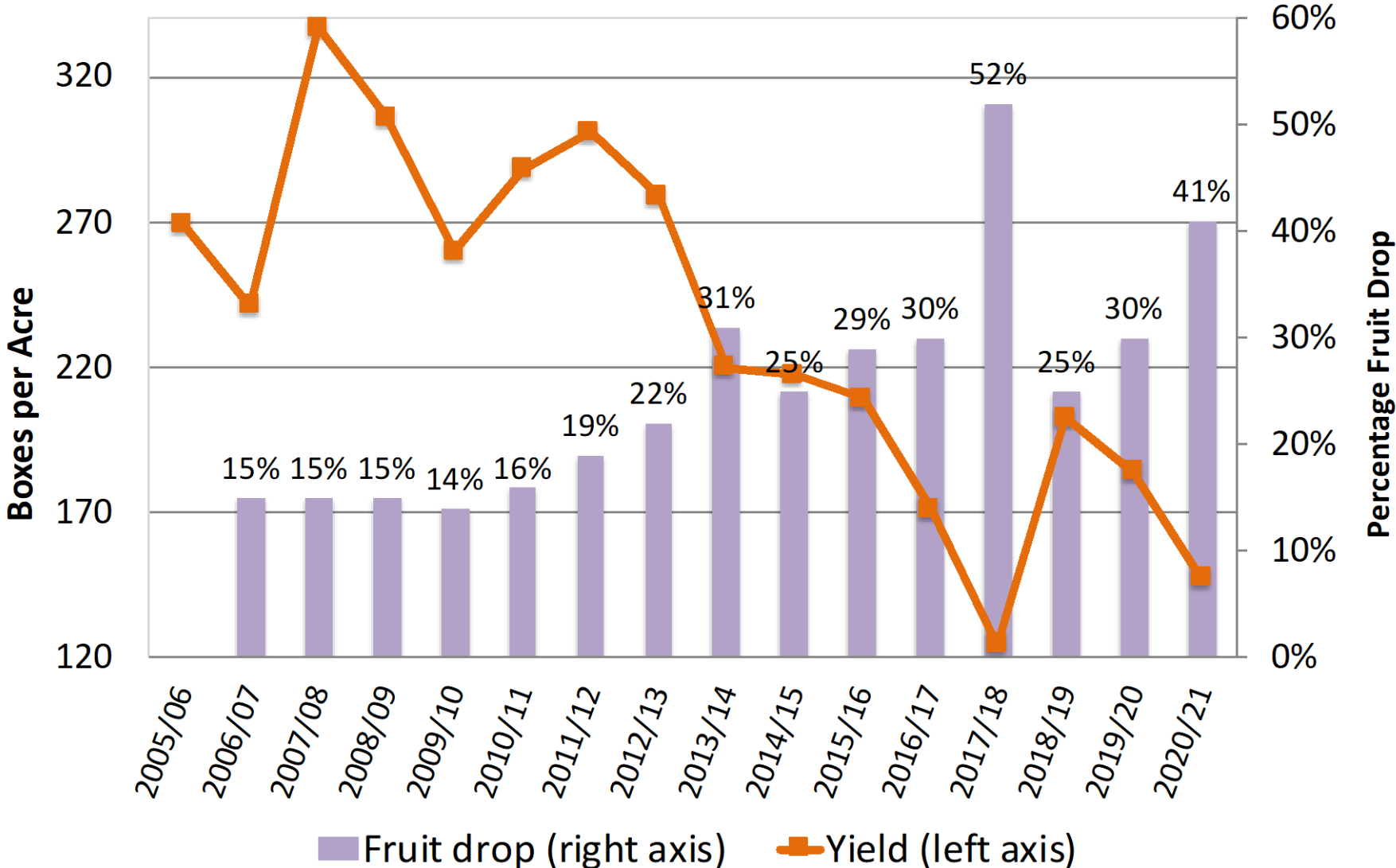


Total Cost of Production per Acre for Processed Oranges in Southwest Florida, 2020/21

	Cost per acre (\$)
<hr/> Total Cultural Costs	1507.79
<hr/> <u>Other Costs</u> Interest on Operating (Cultural) Costs	75.39
Management Cost	144.00
Property Tax/Water Management Assessment	28.73
Interest on Average Capital Investment	126.52
<hr/> Total Other Costs	374.64
<hr/> Total Costs	1882.43

Source: University of Florida, IFAS, CREC

Valencia Oranges Yield and Fruit Drop in Florida



Source: USDA-NASS

Summary and Conclusions

- **Total cost of production** for 2020/21 estimated at \$1,882 per acre, **down \$213** compared to last season
- The cutback was a **response to the significant decrease in prices** in the previous season
- Largest cutbacks were in nutritionals, pruning, and tree replacement
- **Fruit drop estimated at 43% (41%)** for Early and Mids (Valencias)
- Estimated **yield for Early and Mids (Valencias) was 155 (147) boxes per acre**, down 24% (20%) compared to last season
- **For breakeven**, a total cost of \$1,882 requires a **yield of 243 (185) boxes per acre for Early and Mids (Valencias)**, or, alternatively, a **delivered-in price of \$3.01 (\$2.87) per box**

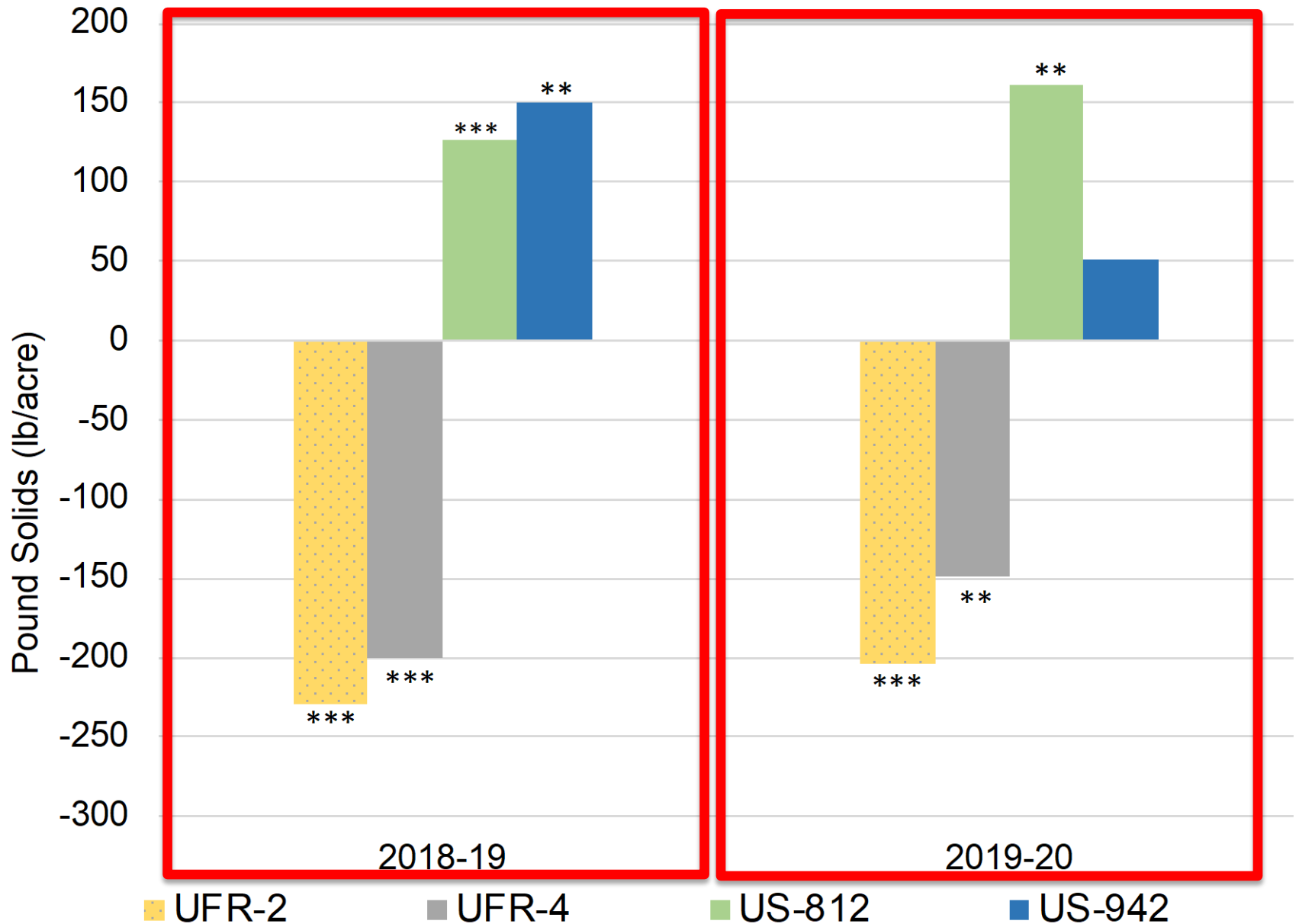
Early Performance of Selected Rootstocks in Commercial Settings

Analyzed yield and economic performance of different rootstocks grafted with Valencia from grower-run side-by-side trials

- Data: annual yields under completely randomized design conducted by CRDF
-> 3 trials:
 - Lake Placid, 240 TPA; Babson Park, 303 TPA; Felda, 202 TPA
- Each site was managed by a different grower => analysis by site because growers used different inputs => only differing treatment across plots within a site was the rootstock (all other major sources of variability were held constant)
- In each site the following rootstocks were evaluated:
 - UFR-2, UFR-3, UFR-4, UFR-16, US-812, and US-942
 - US-897 was also evaluated in the Babson Park site
- Control: Lake Placid -> sour orange; Babson Park -> Carrizo; Felda -> Swingle
- To analyze the yield data, we use regression analysis

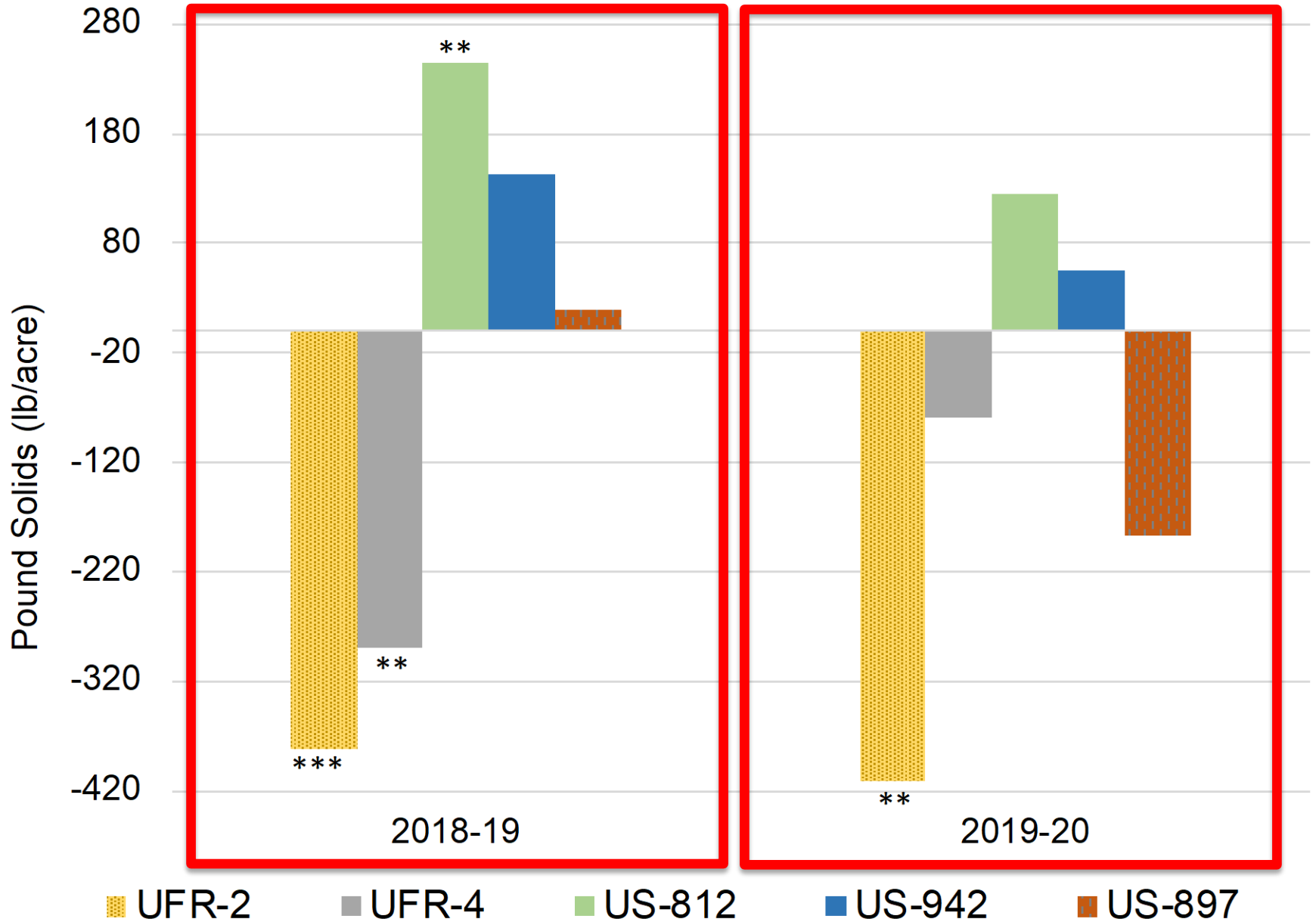
For more information, go to: <https://journals.ashs.org/horttech/view/journals/horttech/aop/article-10.21273-HORTTECH04784-20/article-10.21273-HORTTECH04784-20.xml?ArticleBodyColorStyles=pdf-4377>

Illustration of Regression Results: Differential Yield Relative to Control by Rootstock and Season in Lake Placid



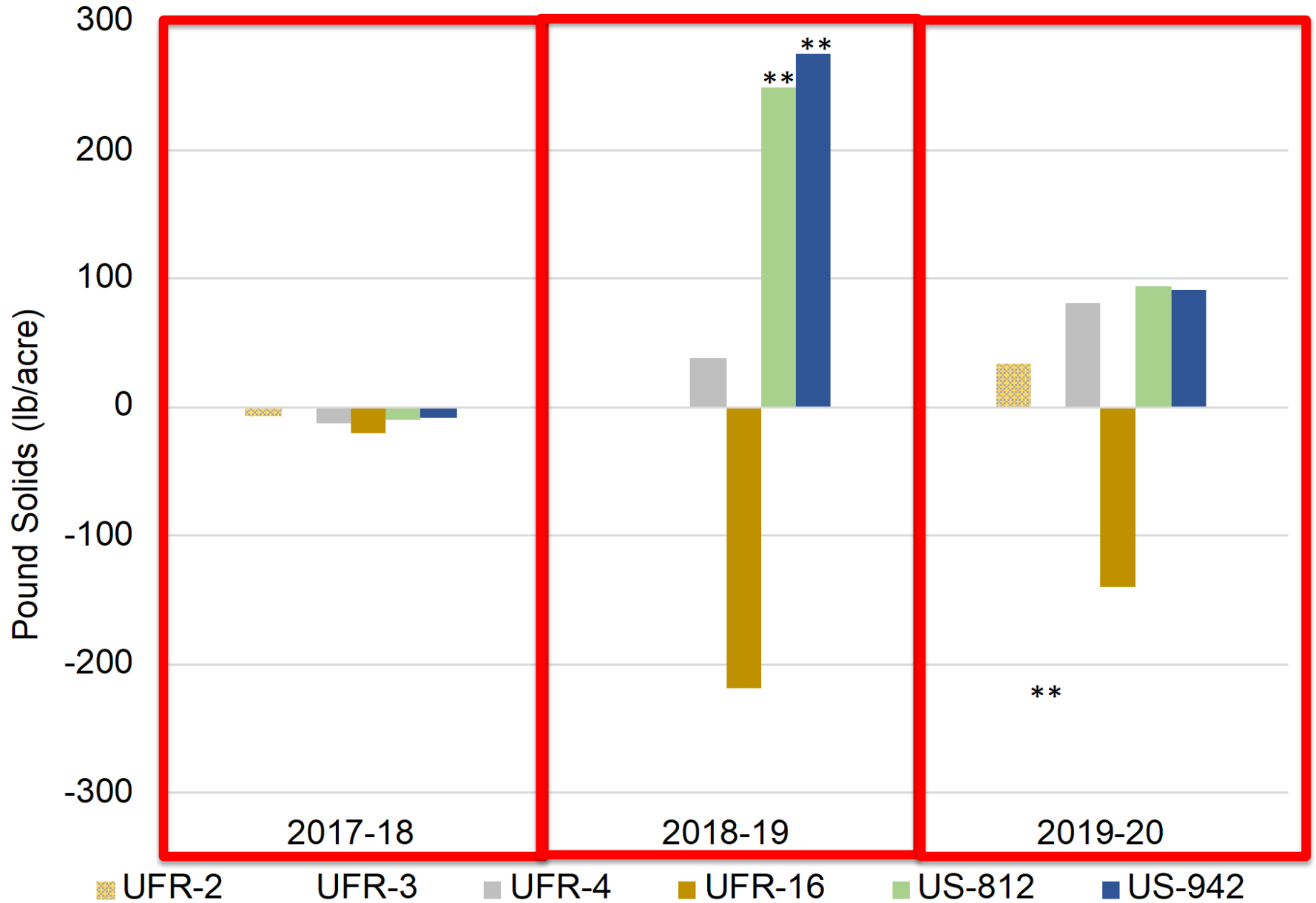
***(**) denotes significance at 1% (5%) level

Illustration of Regression Results: Differential Yield Relative to Control by Rootstock and Season in Babson Park



***(**) denotes significance at 1% (5%) level

Illustration of Regression Results: Differential Yield Relative to Control by Rootstock and Season in **Felda**



***(**) denotes significance at 1% (5%) level

Differential Revenue by Season and Rootstocks Relative to Control

			Season				
			2016/17	2017/18	2018/19	2019/20	Total
Site	Control	Rootstock	Differential Revenue (\$ per acre)				
Lake Placid	Sour Orange	UFR 2		-56.04	-555.12	-254.87	-866.03
		UFR 4		-46.22	-483.32	-185.96	-715.50
		US 812		-2.61	307.89	200.66	505.94
		US 942		42.49	362.12	63.40	468.01
Babson Park	Carrizo Citrange	UFR 2		-353.81	-925.09	-514.07	-1,792.98
		UFR 4		-174.24	-699.45	-99.79	-973.48
		US 812		265.92	590.17	156.27	1,012.36
		US 897		-125.75	44.25	-233.32	-314.81
		US 942		89.73	343.73	68.39	501.84
Felda	Swingle Citrumelo	UFR 2	-71.02	-19.01	-2.62	43.14	-49.50
		UFR 3	74.45	-84.13	-495.87	-270.12	-775.67
		UFR 4	-32.76	-37.10	94.39	100.35	124.88
		UFR 16	3.70	-60.92	-528.95	-174.76	-760.93
		US 812	72.92	-32.22	601.42	117.12	759.24
		US 942	79.80	-24.53	666.24	114.19	835.71

Summary

In Lake Placid:

- **US 812 and US 942 attained positive revenue differences** compared to control
- US 812 seems to be a better choice because in 2019/20 the positive difference with respect to control was larger

In Babson Park:

- **US 812 and US 942 attained positive revenue differences** compared to control
- US 812 attained a cumulative revenue that doubled that of US 942

In Felda:

- **UFR 2 performance was similar to the control but with an intrinsic higher risk** because its performance through time is still unknown
- While **UFR 4 did not attain large differences**, those **increased over time**
- **US 812 and 942 obtained largest differences** in yield (and revenue) compared to the control but they **decreased considerably in 2019/20**

Thank you for attention

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