

Two New SuperSour Rootstocks with Exceptional Field Performance



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Thank You

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Thank you to many collaborating scientists, including Ute Albrecht, Fred Gmitter, Jude Grosser, Greg McCollum, and Matt Mattia.

Thank you to cooperating nurseries and growers for propagating trees and hosting trials.

Thank you to the farm and greenhouse staff and many technicians who grow the trees and collect the data.

Objectives

Objective 1. Create new rootstocks and establish field trials.

Objective 2. Improve methods to breed, propagate, select, and evaluate new citrus.

Objective 3. Collect field performance data from replicated field trials and release new rootstock cultivars as justified by superior performance in multiyear field trials.

Determining that a new rootstock is superior takes numerous years in the field

Replication needed. One group of trees is not adequate. ≥ 8 groups

Data on performance needed, especially cropping.

Multi-year and multi-site evaluation needed.





Active USDA sweet orange rootstock field trials

<u>Trial ID</u>	<u>Scion</u>	<u>Year planted</u>	<u>Location</u>	<u>Number trees</u>
<u>Ft Meade 2014</u>	Valencia 1-14-19	2014	Polk Co.	500
<u>Picos 2014 B1</u>	Valencia 1-14-19	2014	St. Lucie Co.	612
<u>LaBelle 2014 V</u>	Valencia 1-14-19	2014	Hendry Co.	330
<u>Picos 2015 B1</u>	Valencia 1-14-19	2015	St. Lucie Co.	564
<u>WFF 2015 B10NA</u>	Hamlin 1-4-1	2015	Lake Co.	288
<u>WFF 2015 B7</u>	Hamlin 1-4-1	2015	Lake Co.	120
<u>Picos 2016 B5</u>	Valencia 1-14-19	2016	St. Lucie Co.	708
<u>LaBelle 2016</u>	Valencia 1-14-19	2016	Hendry Co.	483
<u>WFF 2017 B10NB</u>	Hamlin 1-4-1	2017	Lake Co.	328
<u>Picos 2017 B1</u>	Valencia 1-14-19	2017	St. Lucie Co.	600
<u>Picos 2017 B5</u>	Valencia 1-14-19	2017	St. Lucie Co.	696
<u>Picos 2017 MAC B4</u>	Valencia B9-65	2017	St. Lucie Co.	270
<u>WFF 2018 B10NC</u>	Hamlin 1-4-1	2018	Lake Co.	272
<u>WFF 2019 B12</u>	Hamlin 1-4-1	2019	Lake Co.	350
<u>Picos 2020 B5R2534</u>	Valencia 1-14-19	2020	St. Lucie Co.	600
<u>Picos 2021 B5R3540</u>	Valencia 1-14-19	2021	St. Lucie Co.	360
<u>Picos 2021 B5R4148</u>	Valencia 1-14-19	2021	St. Lucie Co.	480
<u>WFF 2022 B11</u>	Hamlin 1-4-1	2022	Lake Co.	400
<u>Arcadia 2022</u>	Valencia 1-14-19	2022	Desoto Co.	560
			Total trees	9,291



Picos 2014/15 Valencia trial: 100 rootstocks

Large differences among trees because of rootstock.



Sweet orange roots



US-1688



Two new SuperSour hybrids have been selected for release in 2023:

US-1688 (tentatively US SuperSour #4)

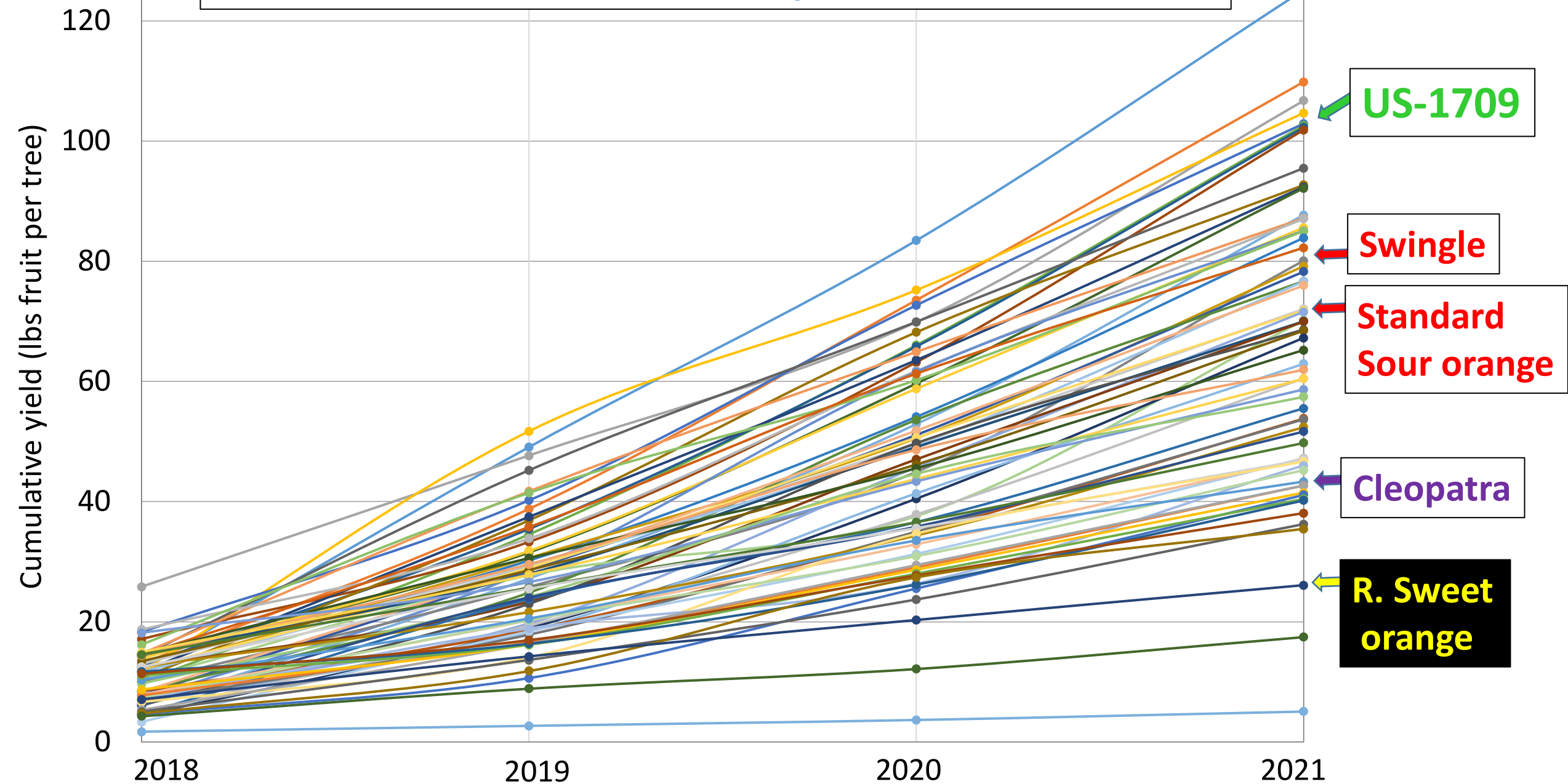
US-1709 (tentatively US SuperSour #5)

Both have demonstrated superior multi-year performance with Valencia and Hamlin scions and on flatwoods and ridge sites.

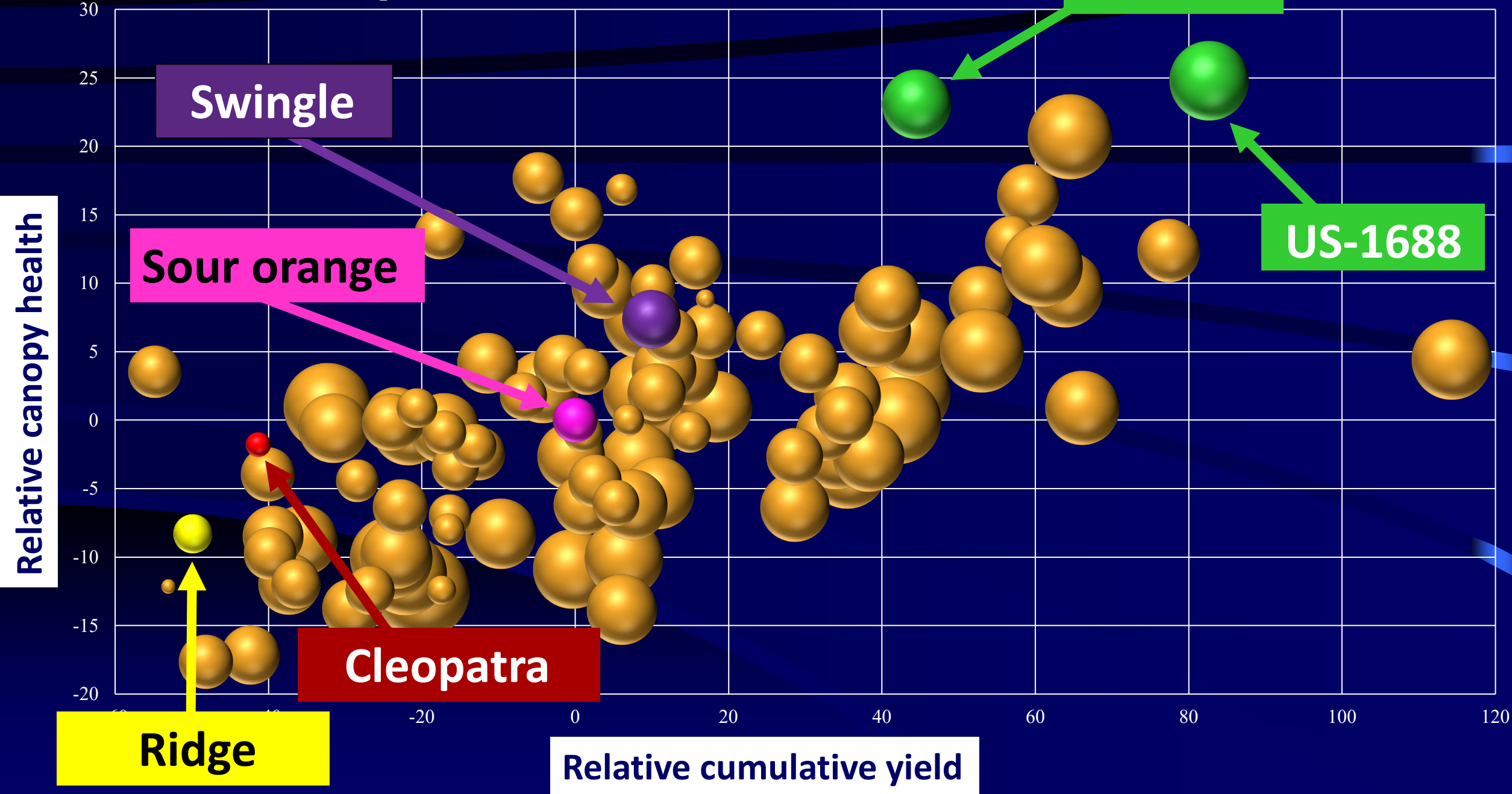


Picos 2014 Valencia trial - Fruit yield over 4 seasons

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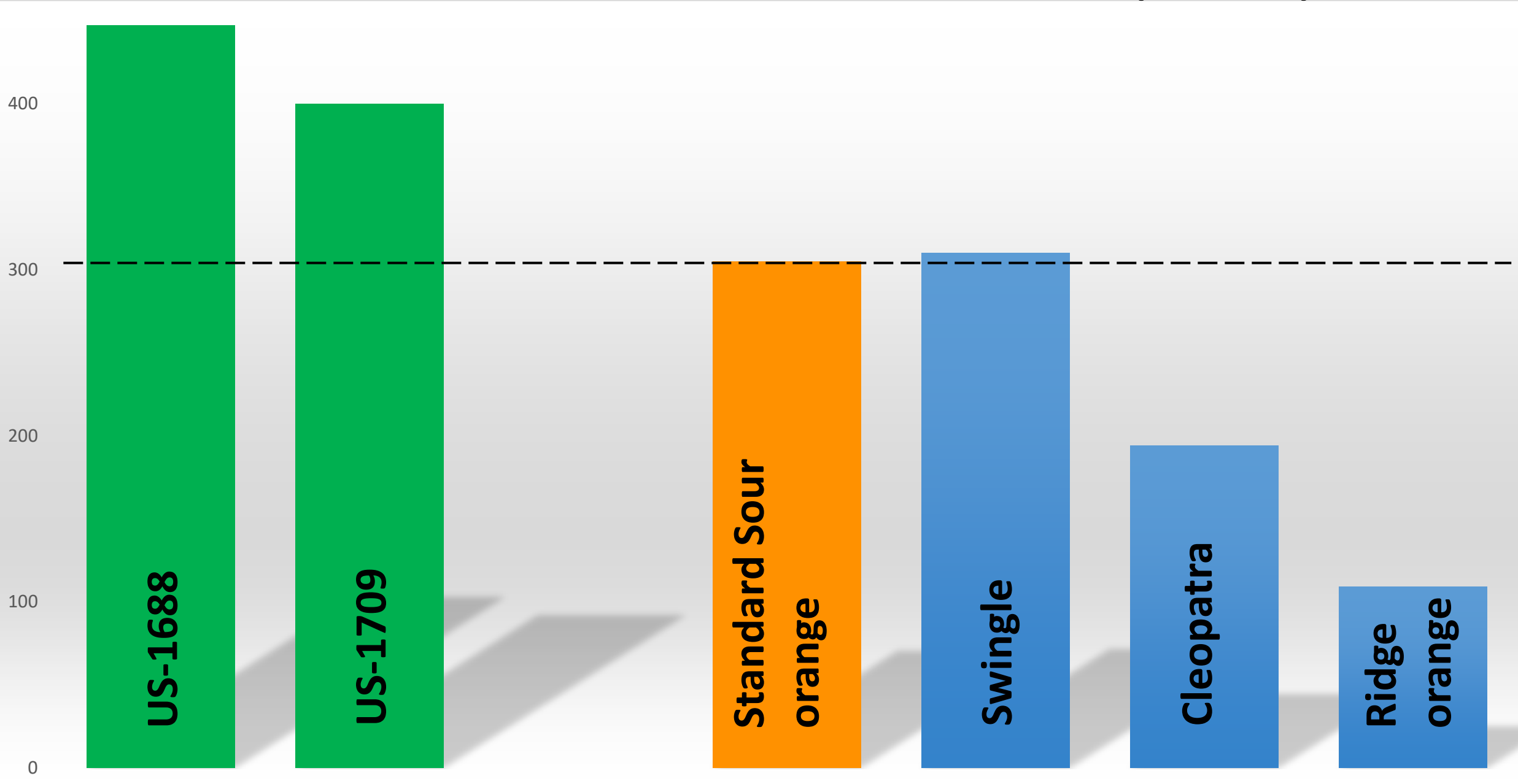


Comparison of Valencia on 100 r US-1709 s

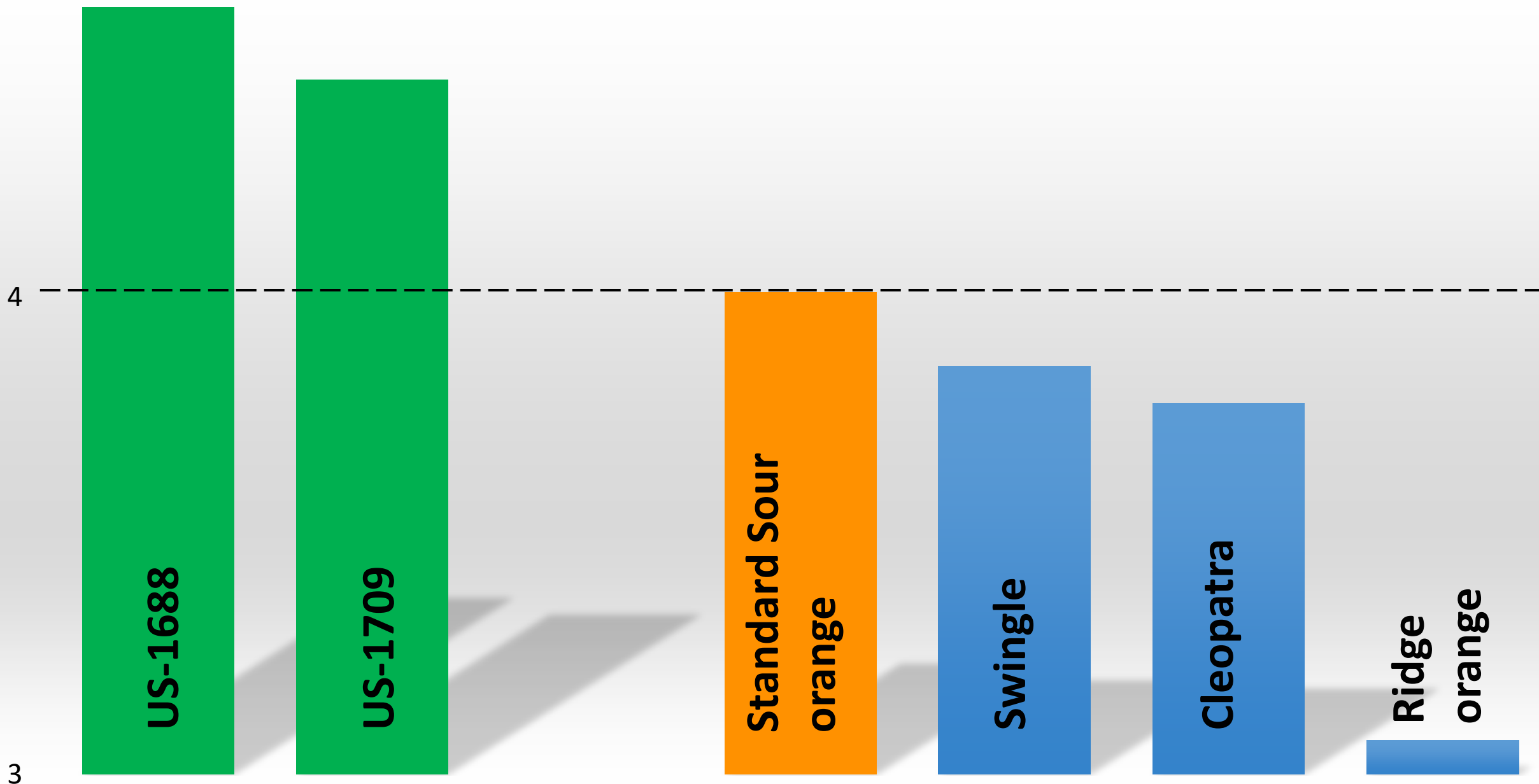




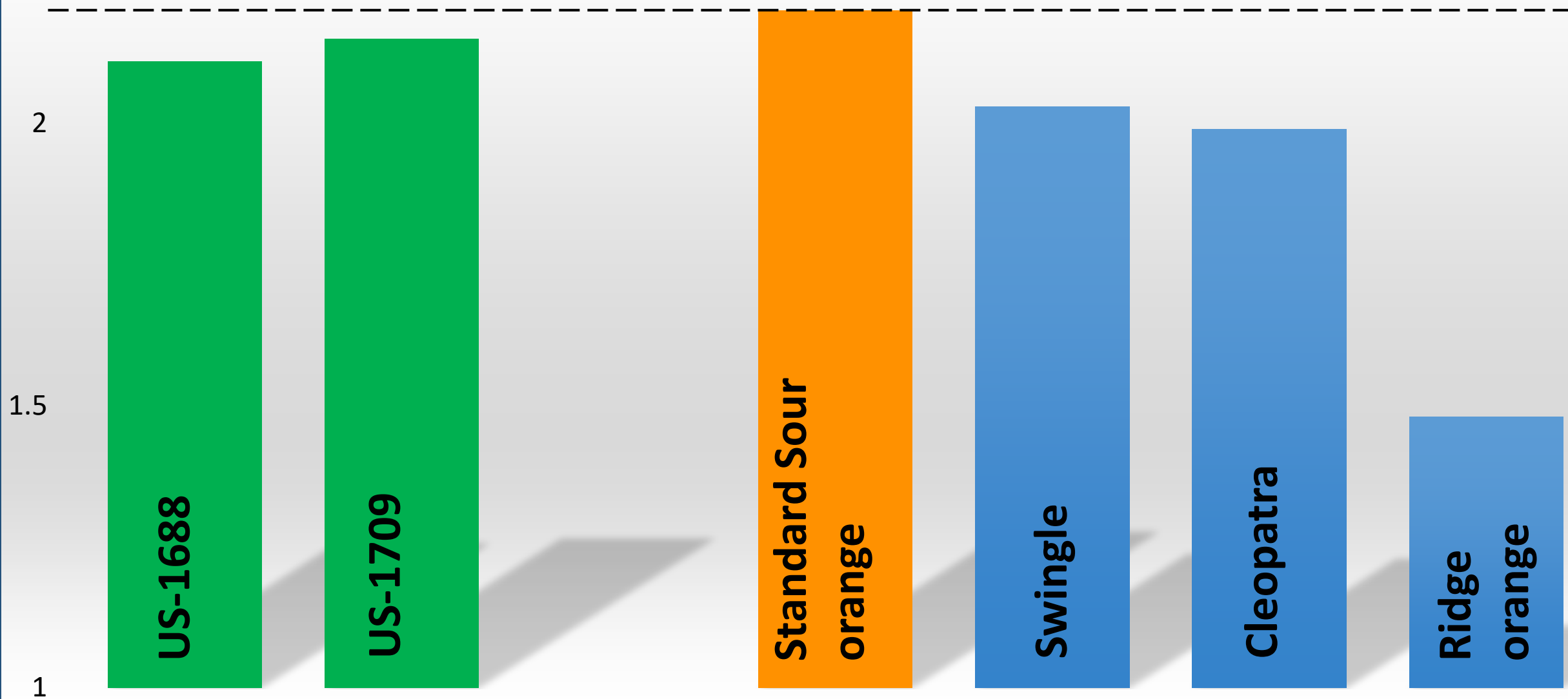
Picos 2014 Valencia Trial - Cumulative Fruit Yield (2018-22)



Picos 2014 Valencia Trial – Canopy Health Score (2021-22)



Picos 2014 Valencia Trial – Tree height





Picos 2014 Valencia Trial – Kg TSS Yield/hectare/year

400

200

0

US-1688

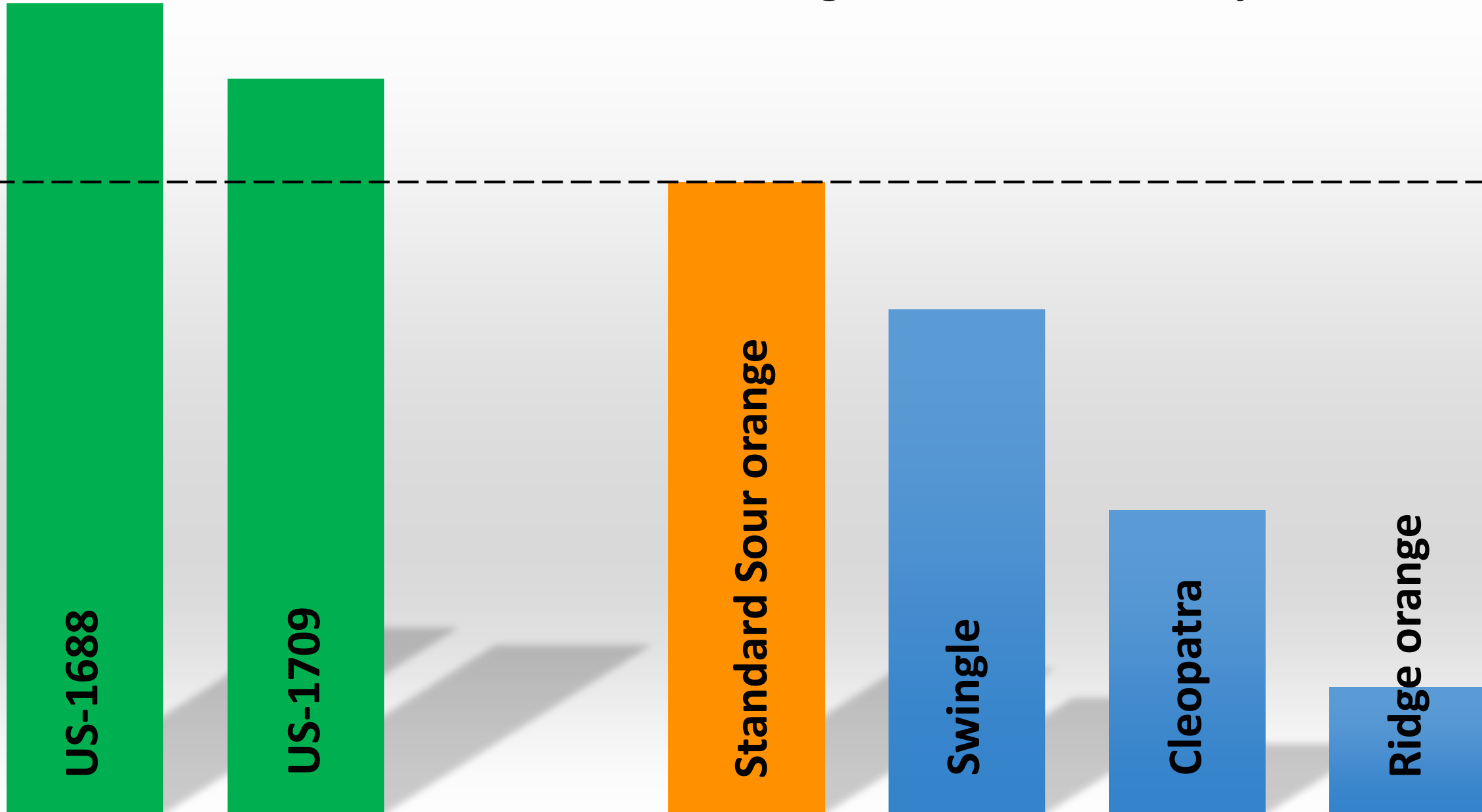
US-1709

Standard Sour orange

Swingle

Cleopatra

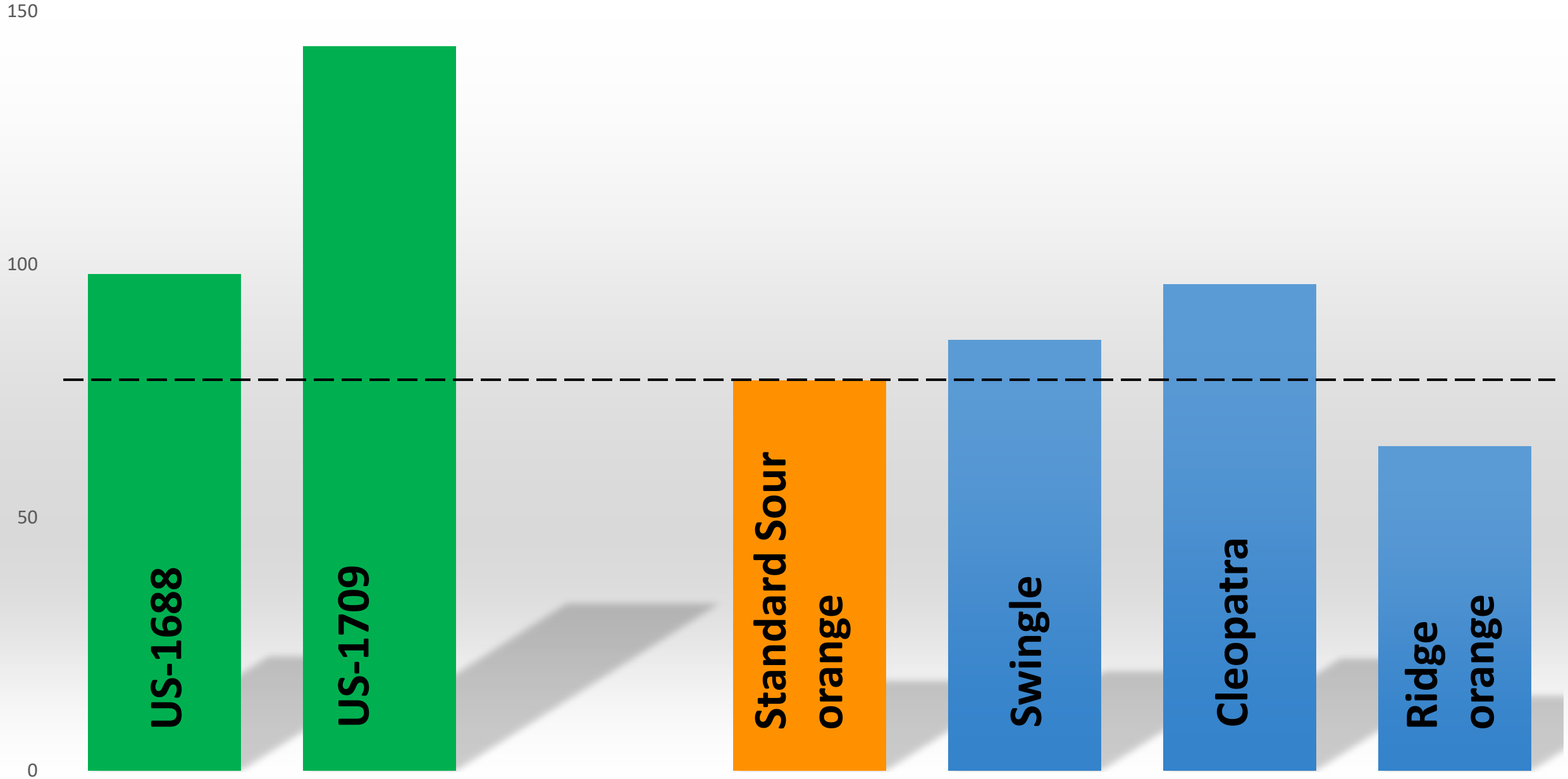
Ridge orange



The rootstocks US-1688 and US-1709 have demonstrated superior field performance with Hamlin scion on the Ridge also.

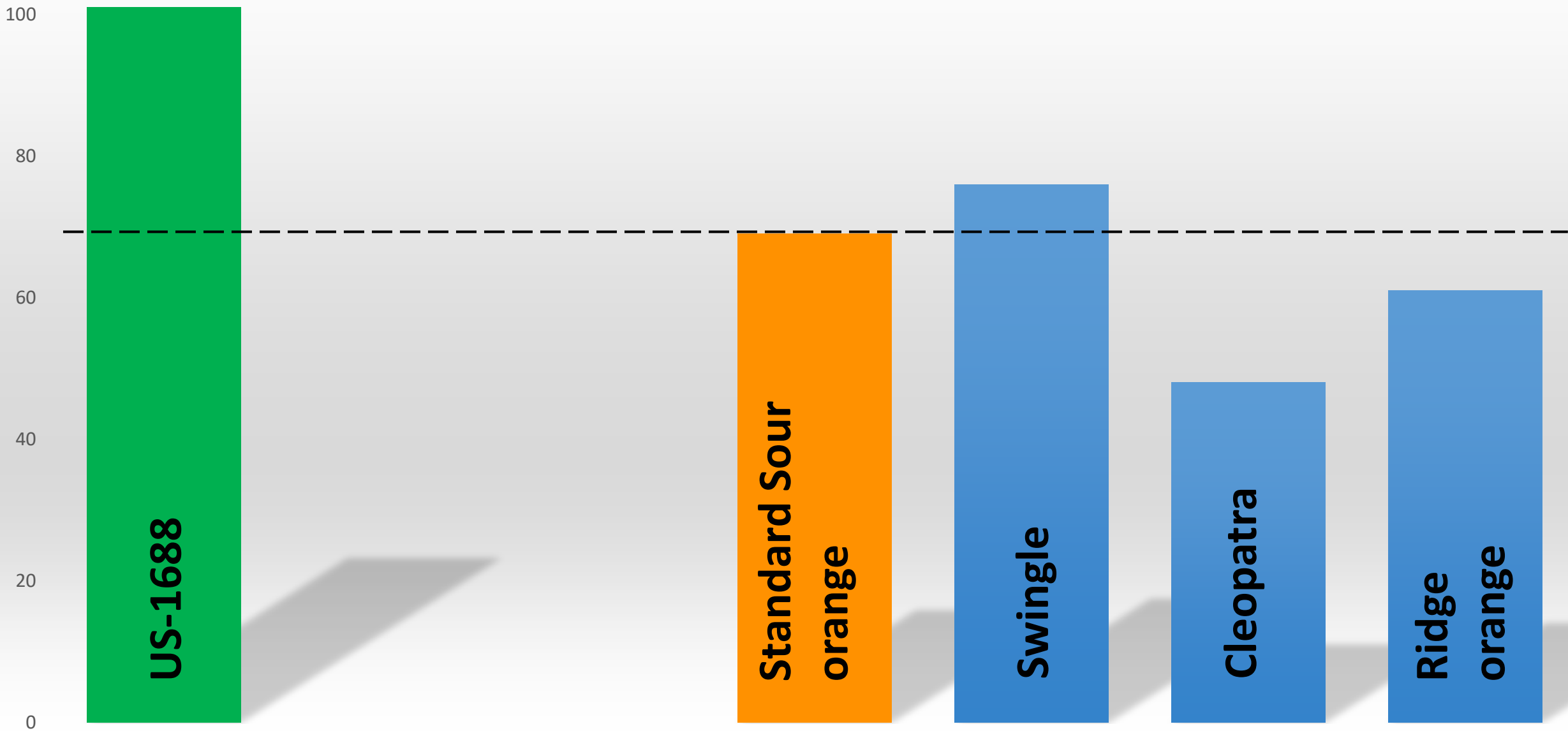


Whitmore 10NB Hamlin Trial - Cumulative Fruit Yield (2020-22)





Whitmore 10NC Hamlin Trial - Cumulative Fruit Yield (2020-22)





Request was submitted for release of SuperSour 4 and 5 rootstocks.

Approval anticipated soon.



Will be happy to answer questions at the
Q&A session.

Or email to kim.bowman@usda.gov