

VigorClone[®]

Pistachio Rootstock Program



Duarte VigorClone® Rootstock Advantages

- Duarte Nursery has patented 4 high-vigor clonal rootstocks:
 - V211, V214, D110, D71
- Field-tested clones with excellent vigor, excellent production, and excellent resistance
 - Increase growing advantages of UCB-1 rootstock and reduce seedling variability.
 - High positive correlation between trunk cross-sectional area and crop yields

Duarte Indiana Ranch VigorClone Trial

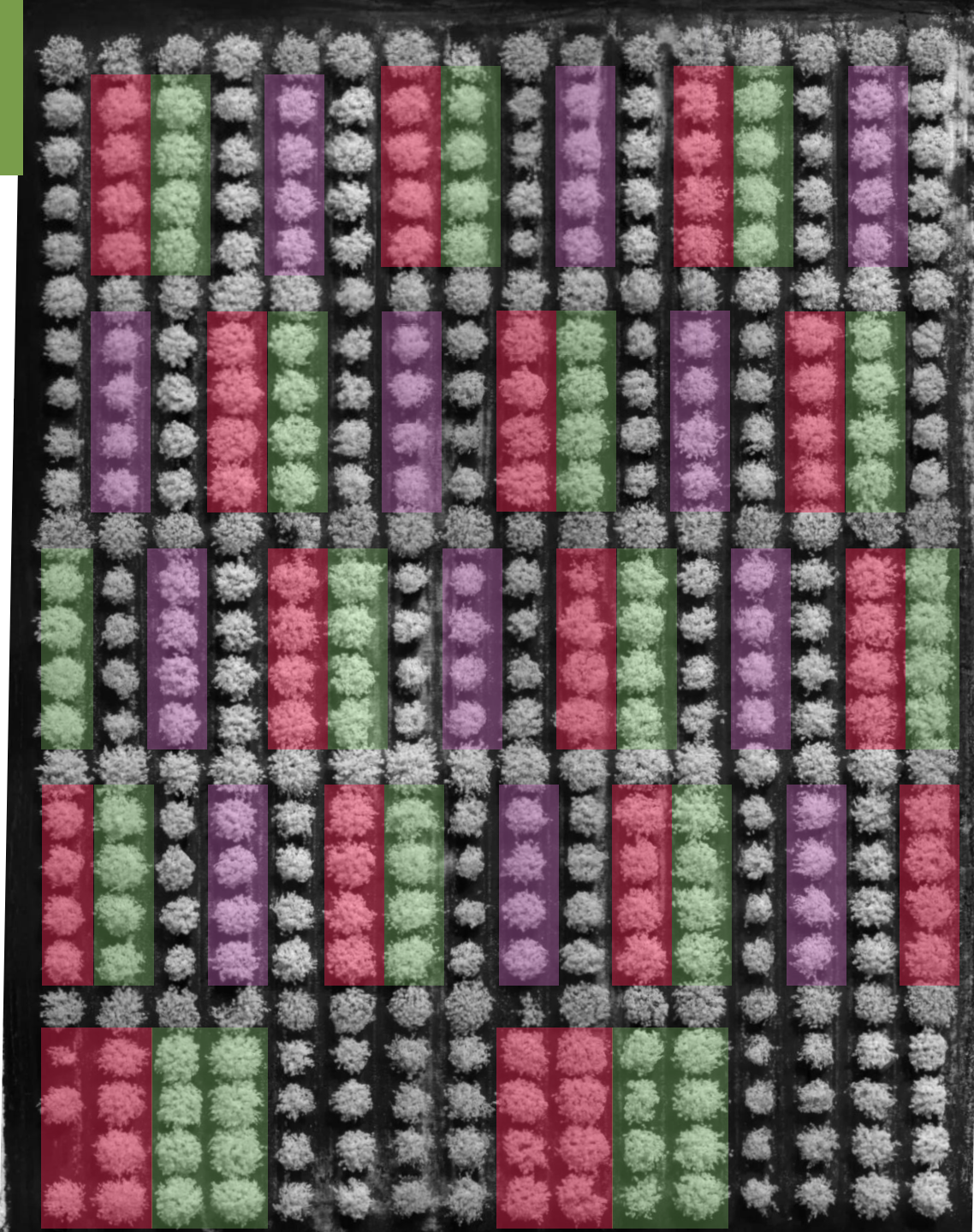
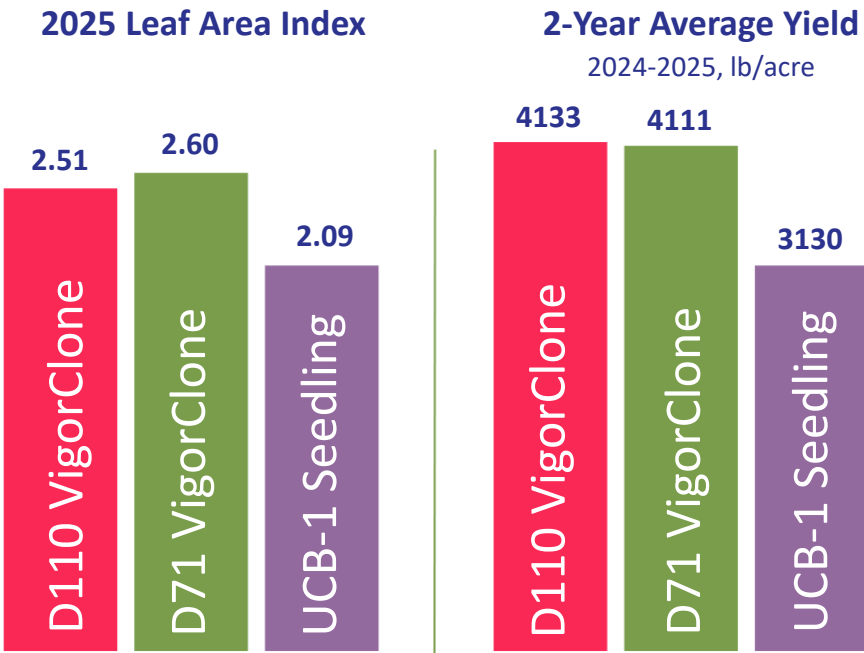
Data taken 2024-2025, trial planted 2015



Compared to UCB-1 Seedling...

D110 Clonal has:
20% bigger canopies
32% more yield

D71 Clonal has:
24% bigger canopies
31% more yield

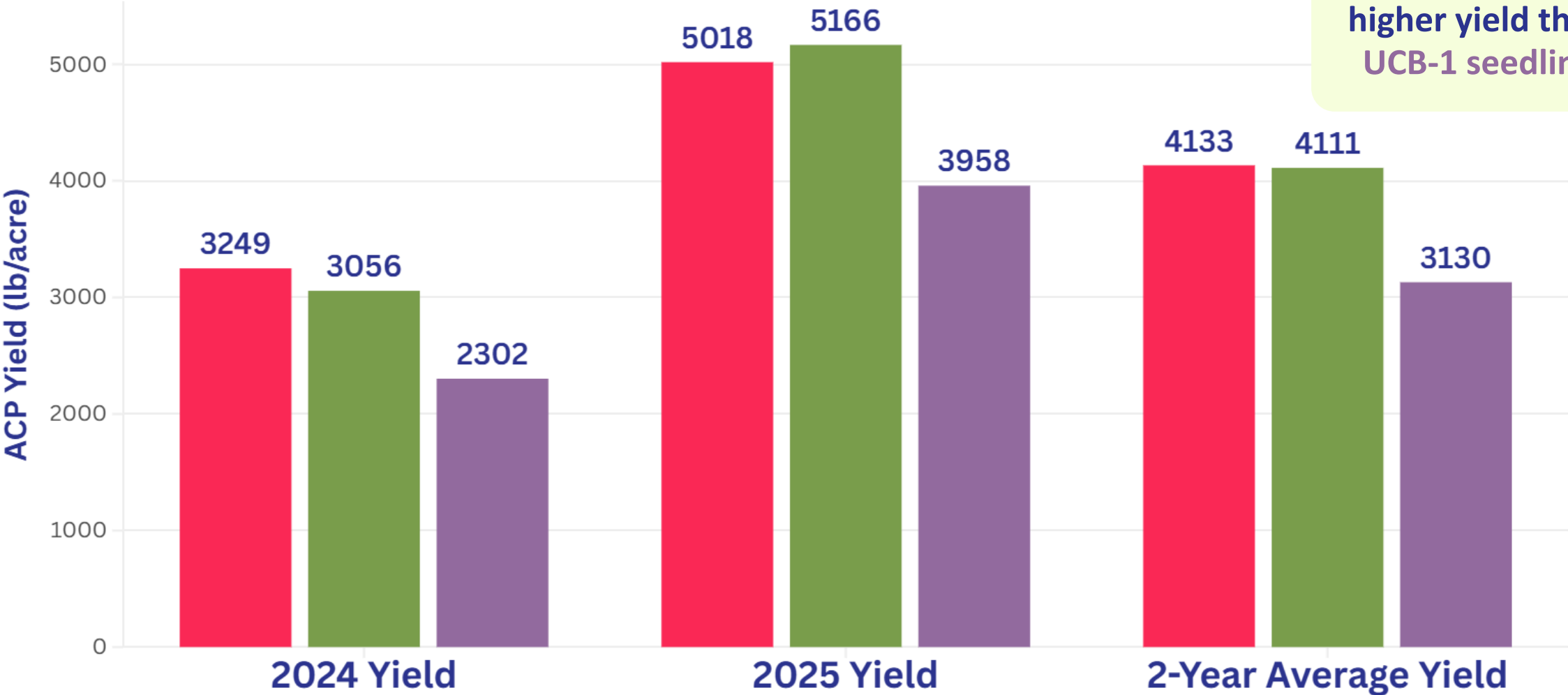


Duarte Indiana Ranch Annual Production (ACP lb/acre)

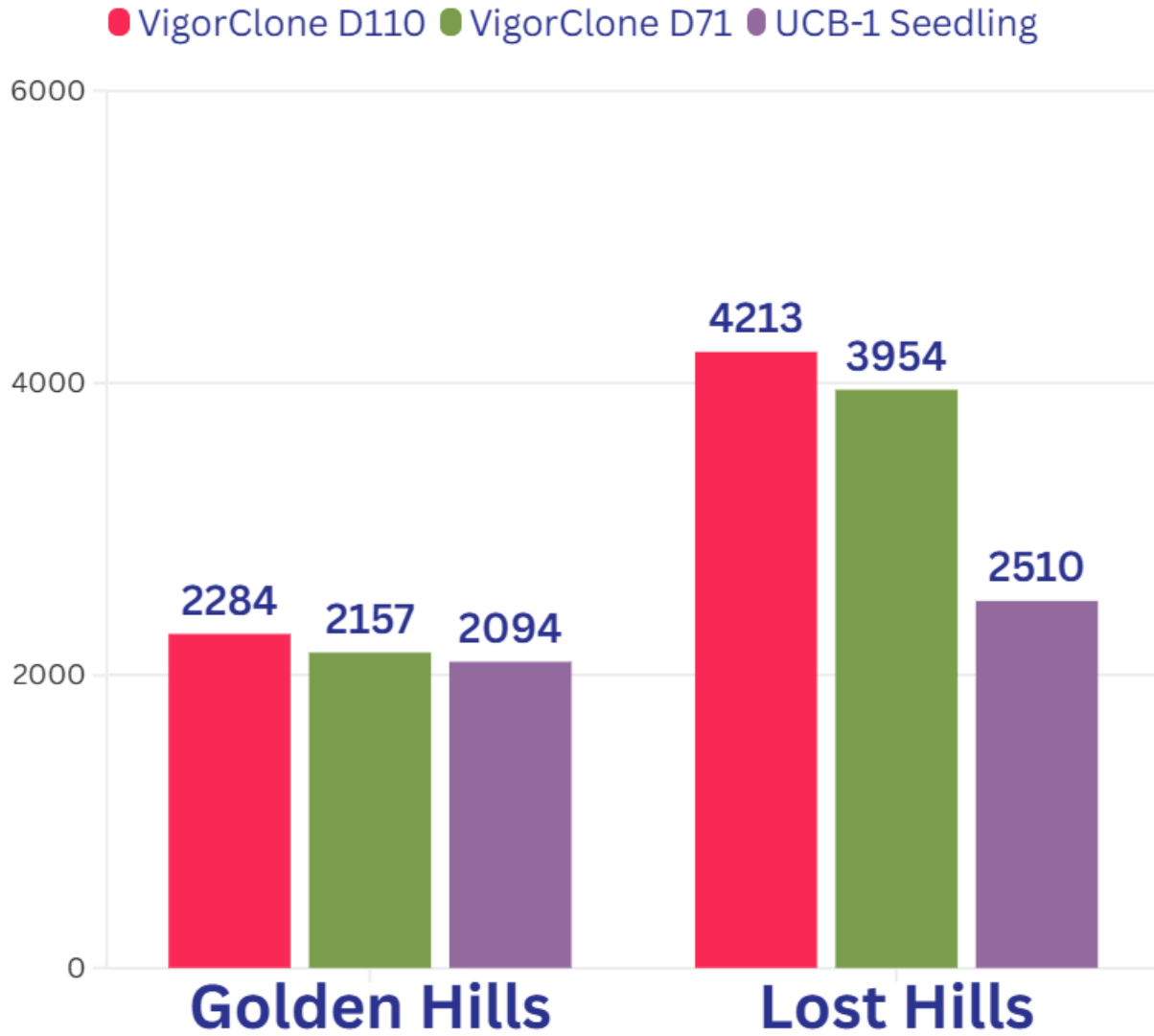
Planted 2015, 135 TPA, Randomized and Replicated on Lost Hills & Golden Hills.

VigorClone D110 VigorClone D71 UCB-1 Seedling

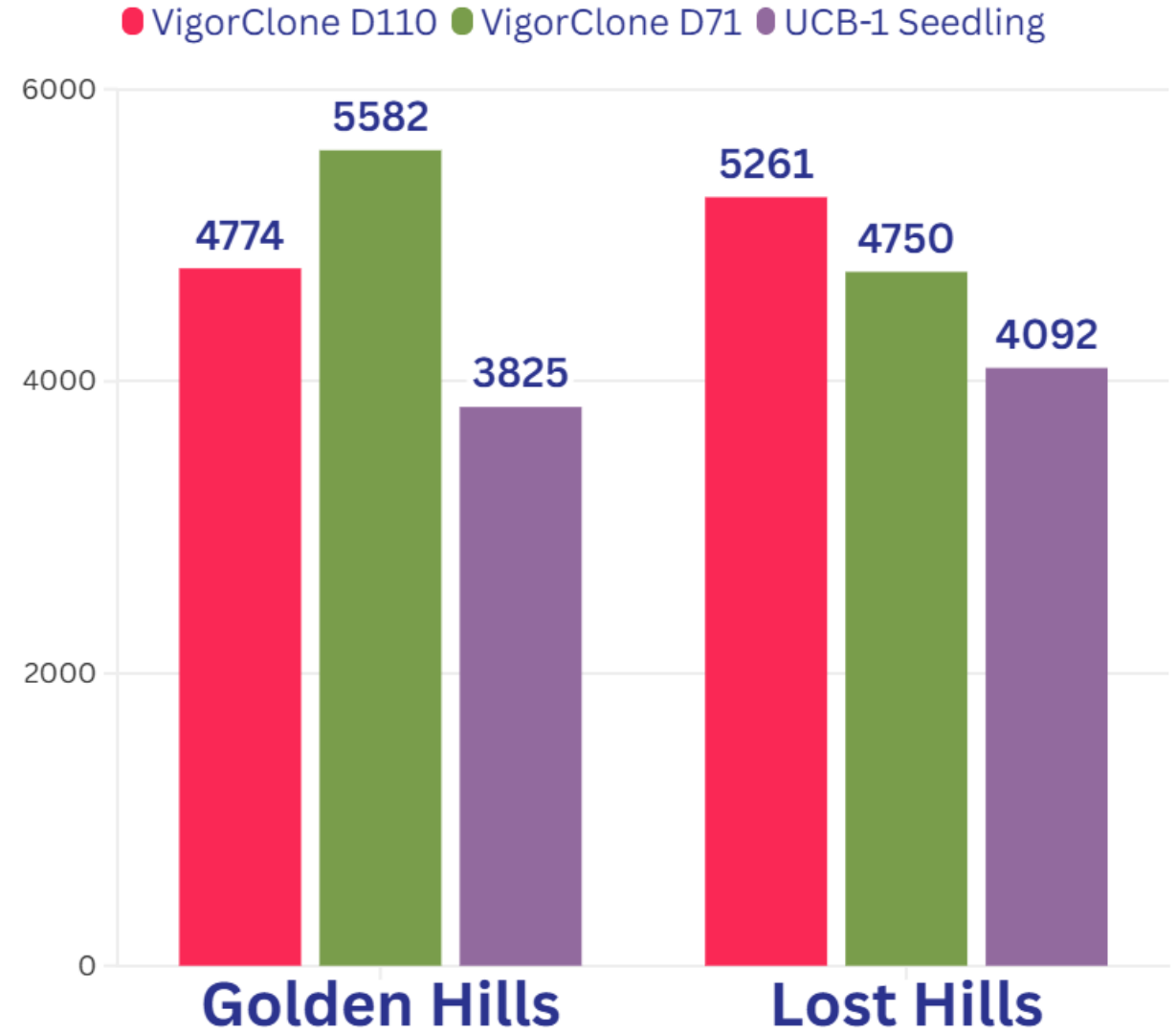
31% - 32%
higher yield than
UCB-1 seedling

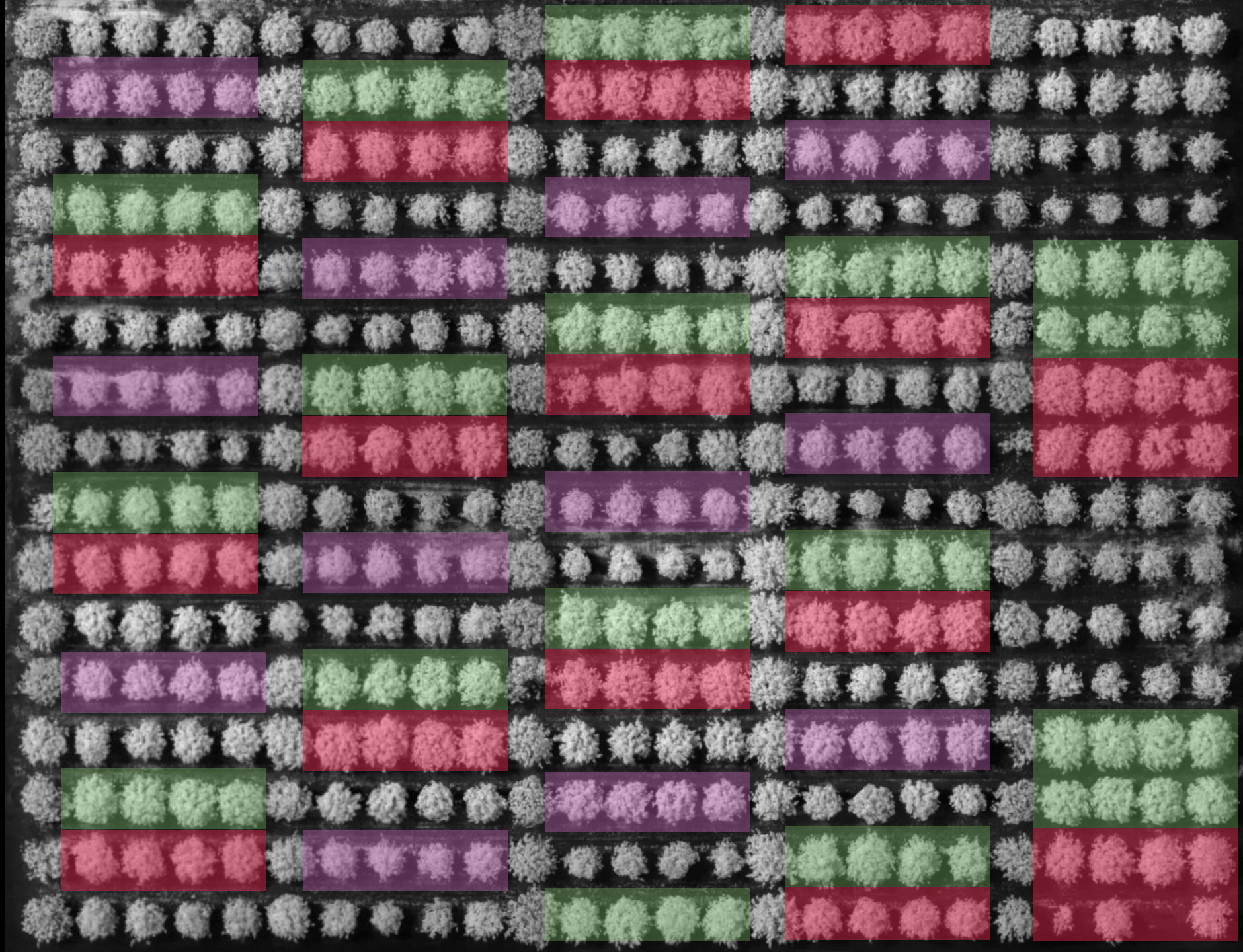


Indiana 2024 Harvest by Scion



Indiana 2025 Harvest by Scion





Kern County VigorClone Trial

Data taken July 2025, trial planted 2015

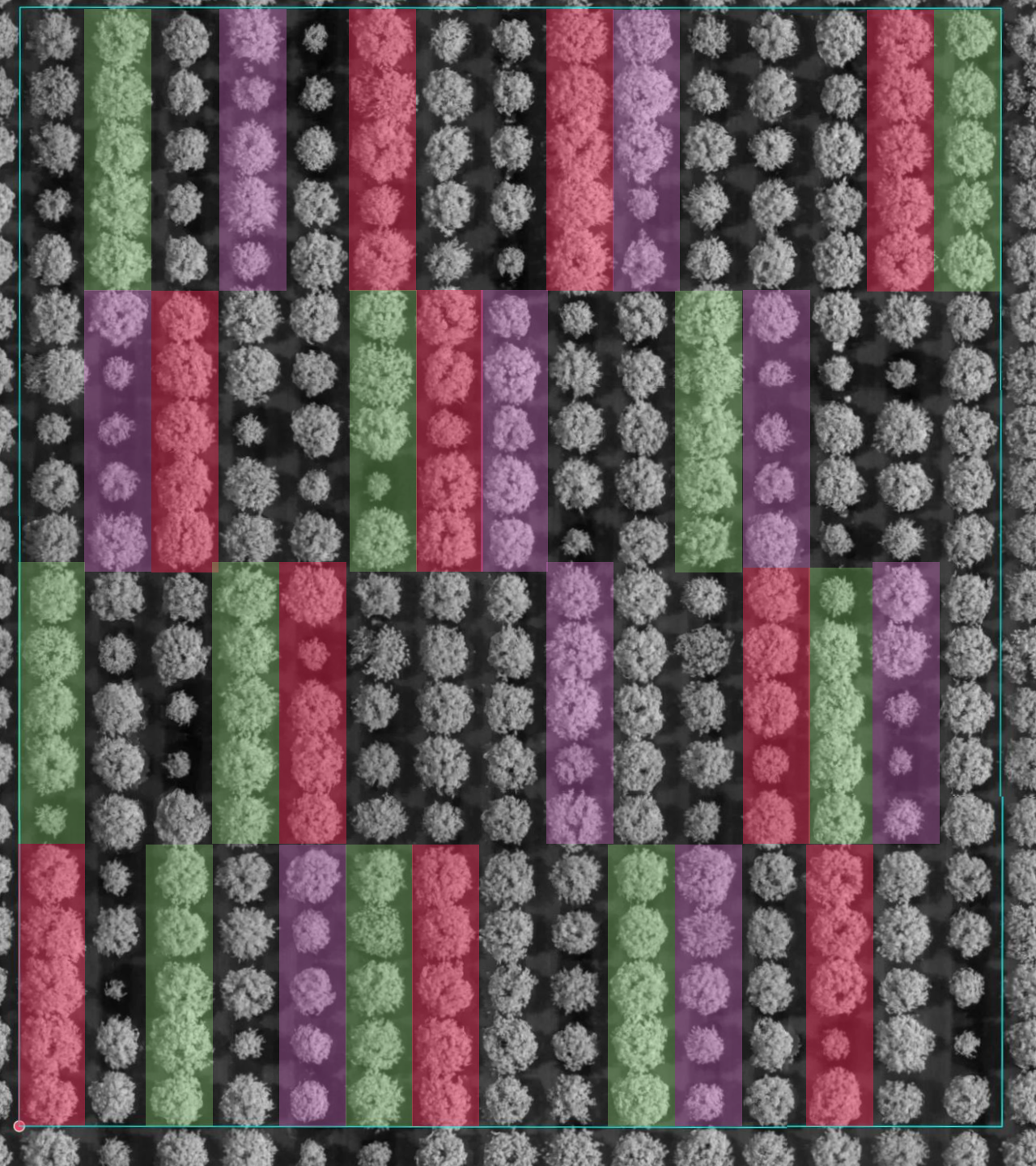
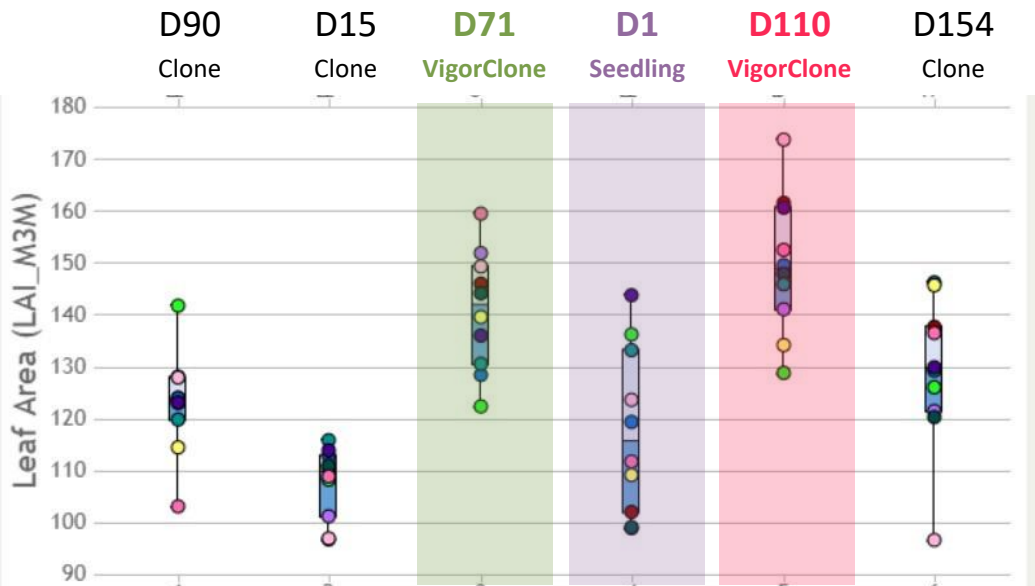
VigorClone® D110

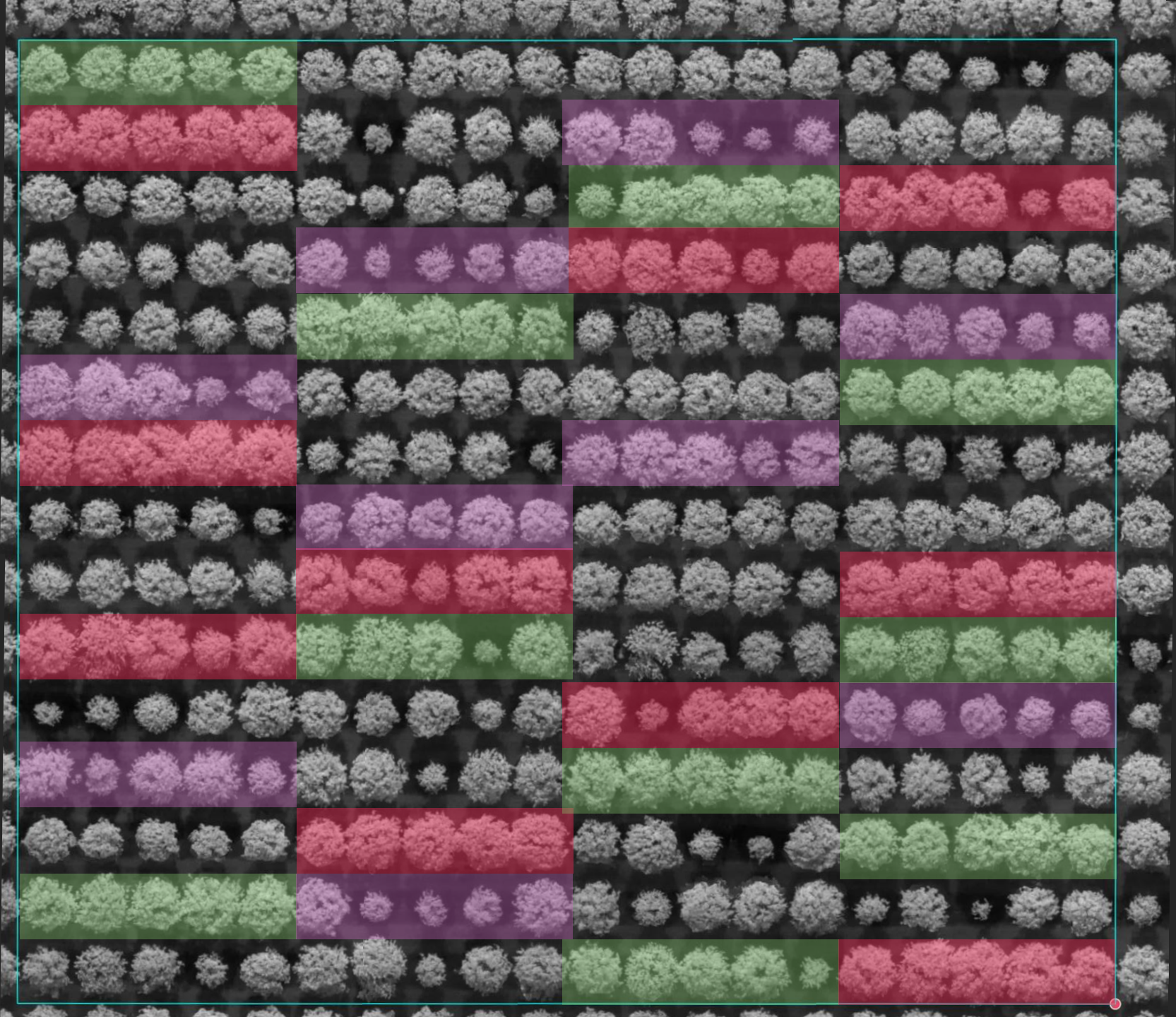
VigorClone® D71

UCB-1 Seedling

2025 Leaf Area Index

		Treatment		Aerial LAI_M3M Timecourse		Area Under the Curve	
☒ Check All	#	Name		☒ 3/15/2025	☒ 7/18/2025 N/A	AVG	STDEV
☒	1	D90			1.96845 cd	123.02837 cd	9.899
☒	2	D15			1.72362 d	107.72638 d	6.91414
☒	3	D71			2.25383 ab	140.86441 ab	11.56425
☒	4	D1			1.88497 cd	117.81065 cd	16.16757
☒	5	D110			2.39474 a	149.67106 a	13.39105
☒	6	D154			2.06502 bc	129.06385 bc	14.51282





Pyramid Hills VigorClone Trial

Data taken from 2014 onwards, Trial planted 2002



VigorClone® V211

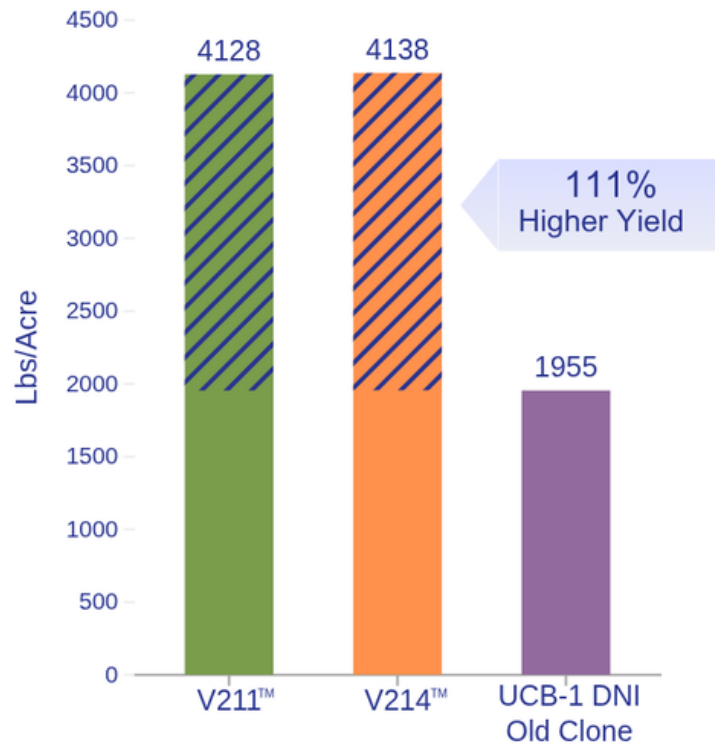


VigorClone® V214



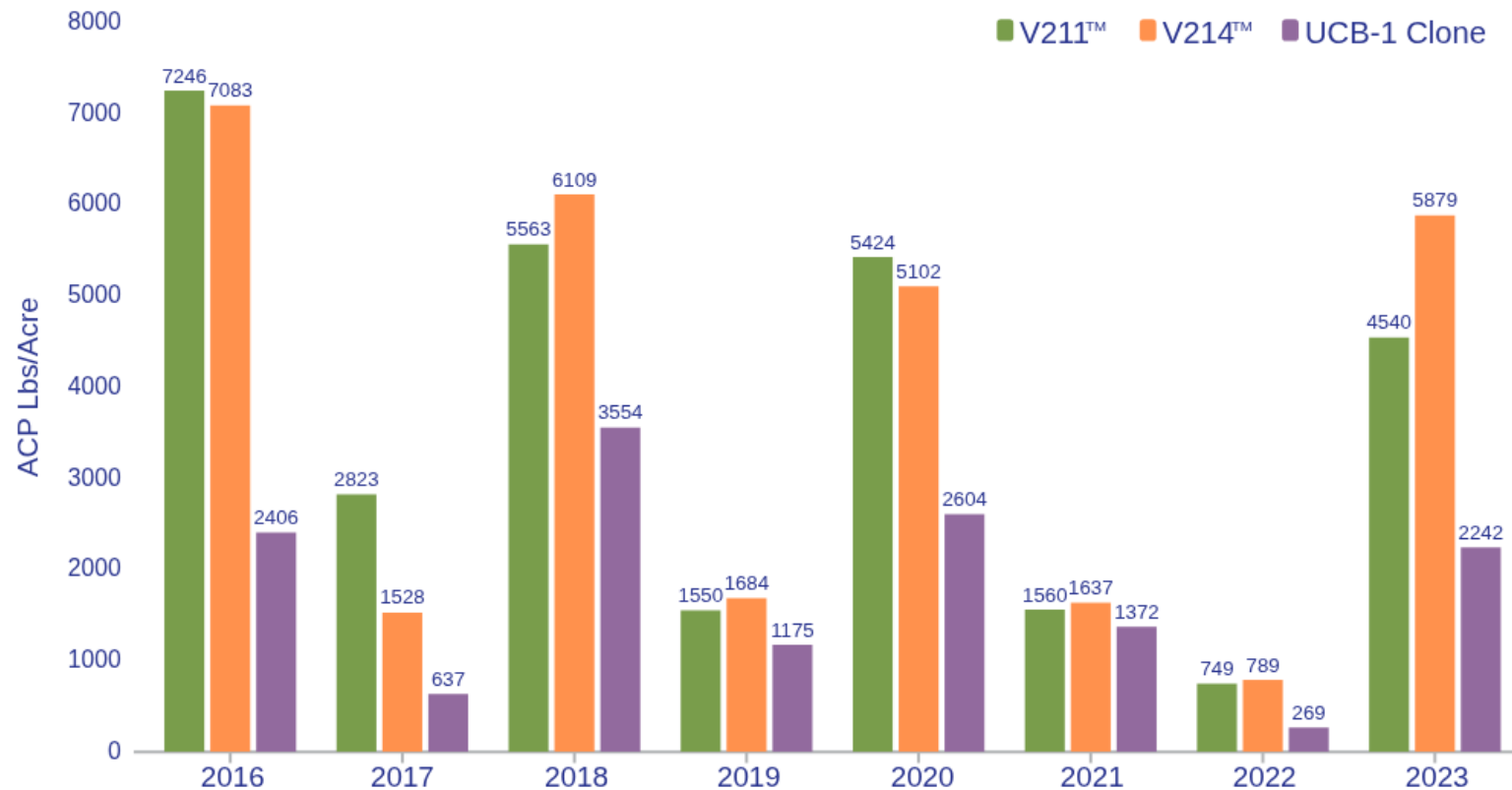
UCB-1 Clonal

V211 & V214 AVERAGE YIELD 2014-2023



Nine-Year Average ACP Yield per Acre @ 136 Trees/acre
(lbs)

V211 & V214 ANNUAL YIELD COMPARISON



Pyramid Hills VigorClone Trial



6th Leaf VigorClone[®] Planting- Kingman, AZ

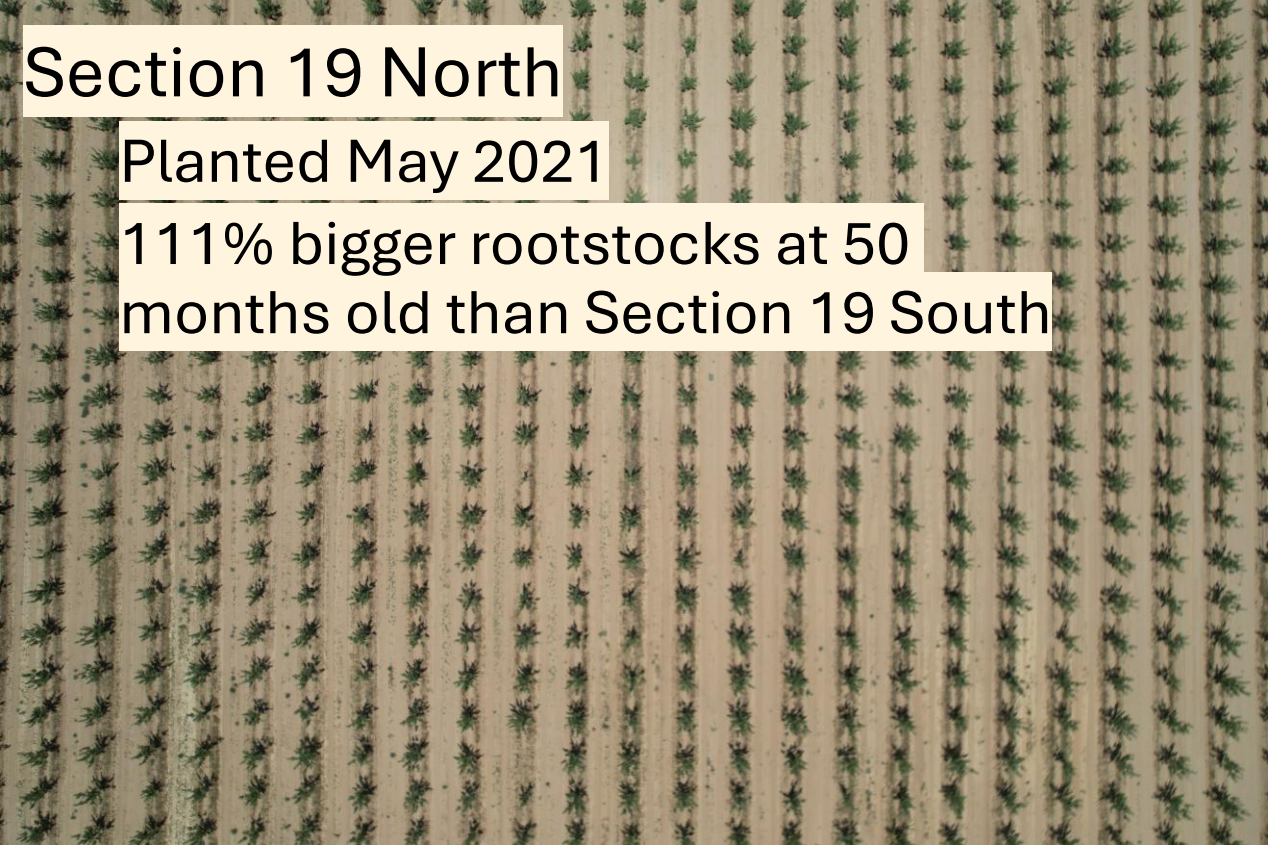


Kingman, AZ Pistachio S19N and S19S Aerials



Section 19 South

Planted June 2019



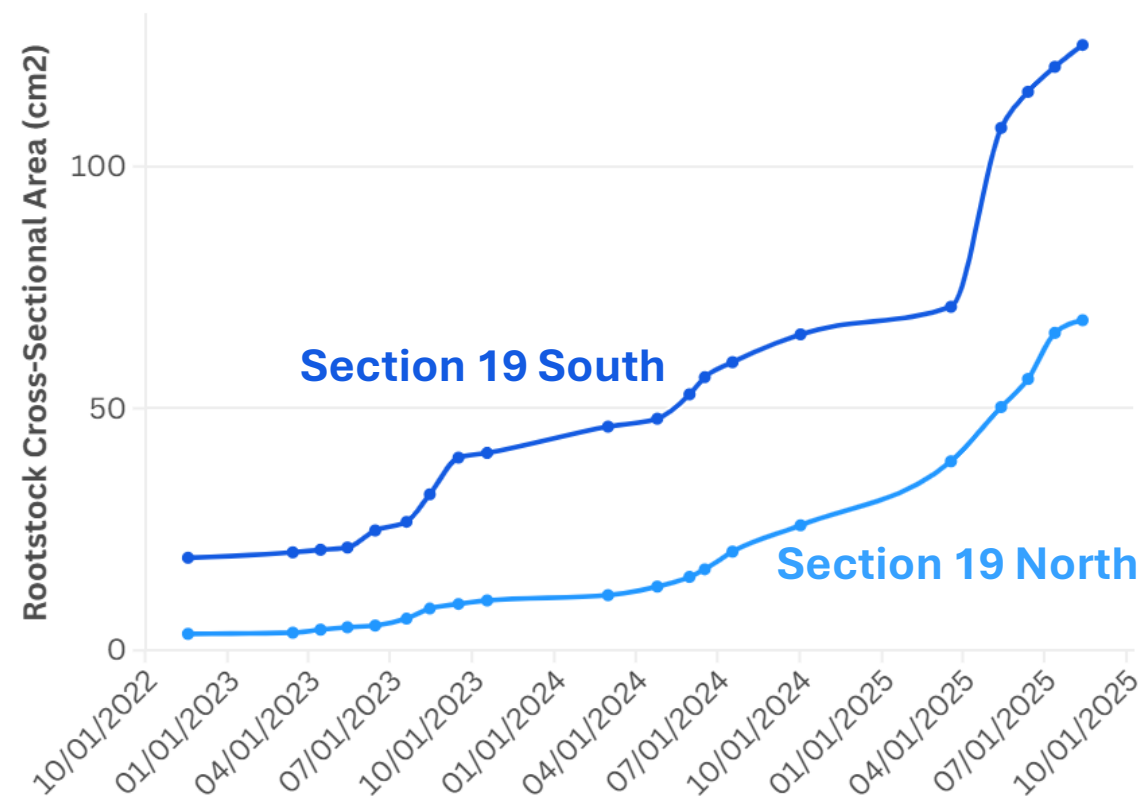
Section 19 North

Planted May 2021

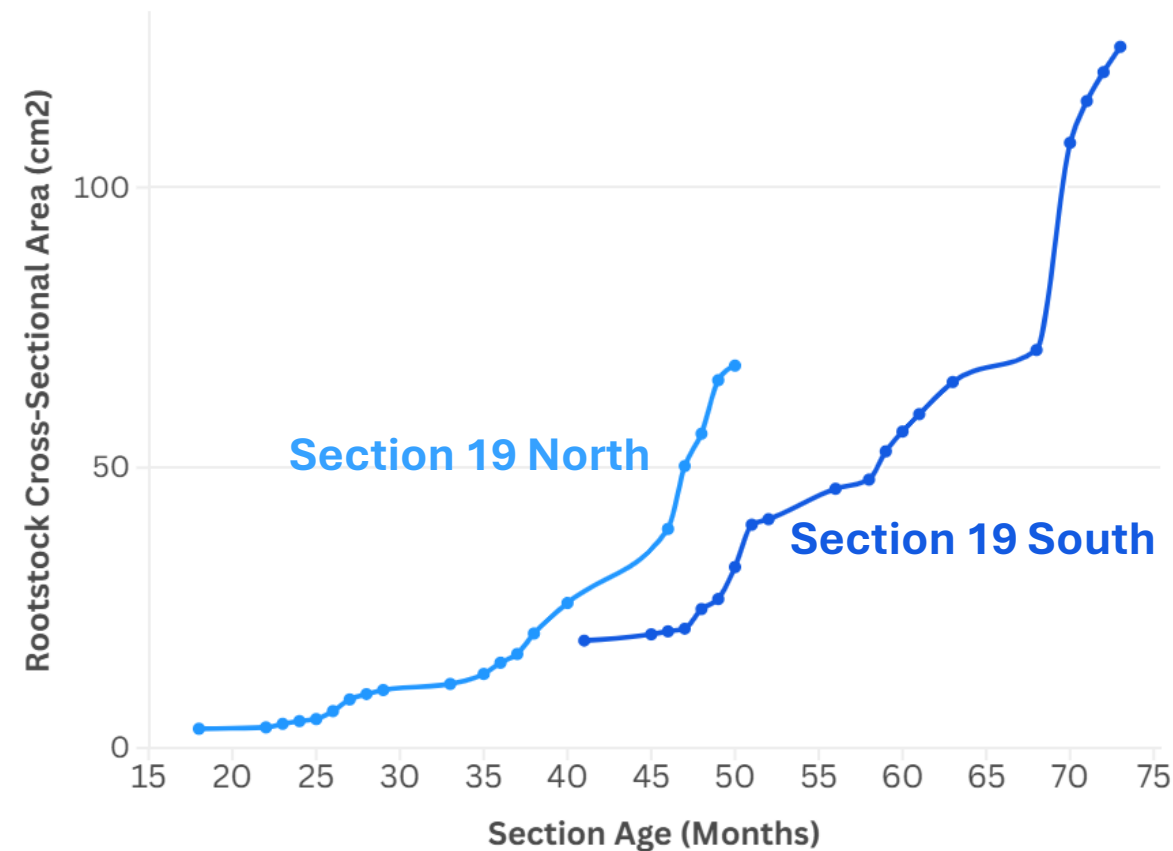
111% bigger rootstocks at 50 months old than Section 19 South

Peacock Ranch- Section 19 Rootstock Size Comparison

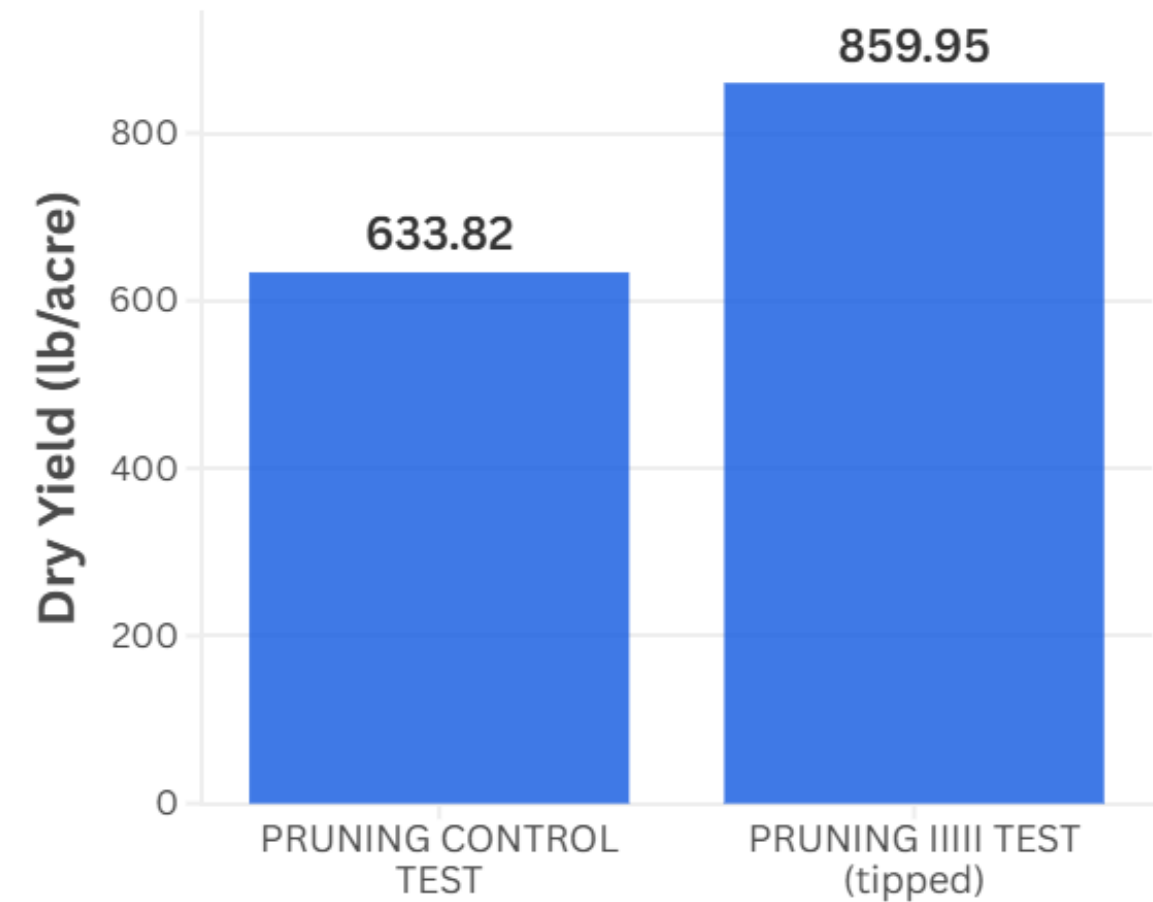
Rootstock Cross-Sectional Area by Date Collected



Rootstock Cross-Sectional Area by Section Age



Peacock Ranch Tipped Pruning Trial



Optimal Pistachio Orchard Features

Design Element	Description	Economic and Sustainability Benefits
Spacing	Moderate-to-high density, 13'-14' tree x 20' row	Earlier production
Pruning	Central leader and minimal pruning	Lower labor and shredding costs, improved early yields, less wounds for disease entry
VigorClone Rootstock	Duarte patented VigorClone rootstock selections	Higher yields, higher input efficiency, excellent uniformity and resistance
High Vigor Scion	50/50 Lost Hills and Golden Hills	Proven faster establishing, higher yields, synergistic with VigorClone, minimal pruning
Optimized Irrigation	Build on field research from Kingman, AZ, clonal rootstocks have a uniform response to irrigation	Clonal rootstock genetics allow for optimized fertilizer and water strategies with specific inputs

THE GOLD NUT™



YORIZANE

— ALMOND —

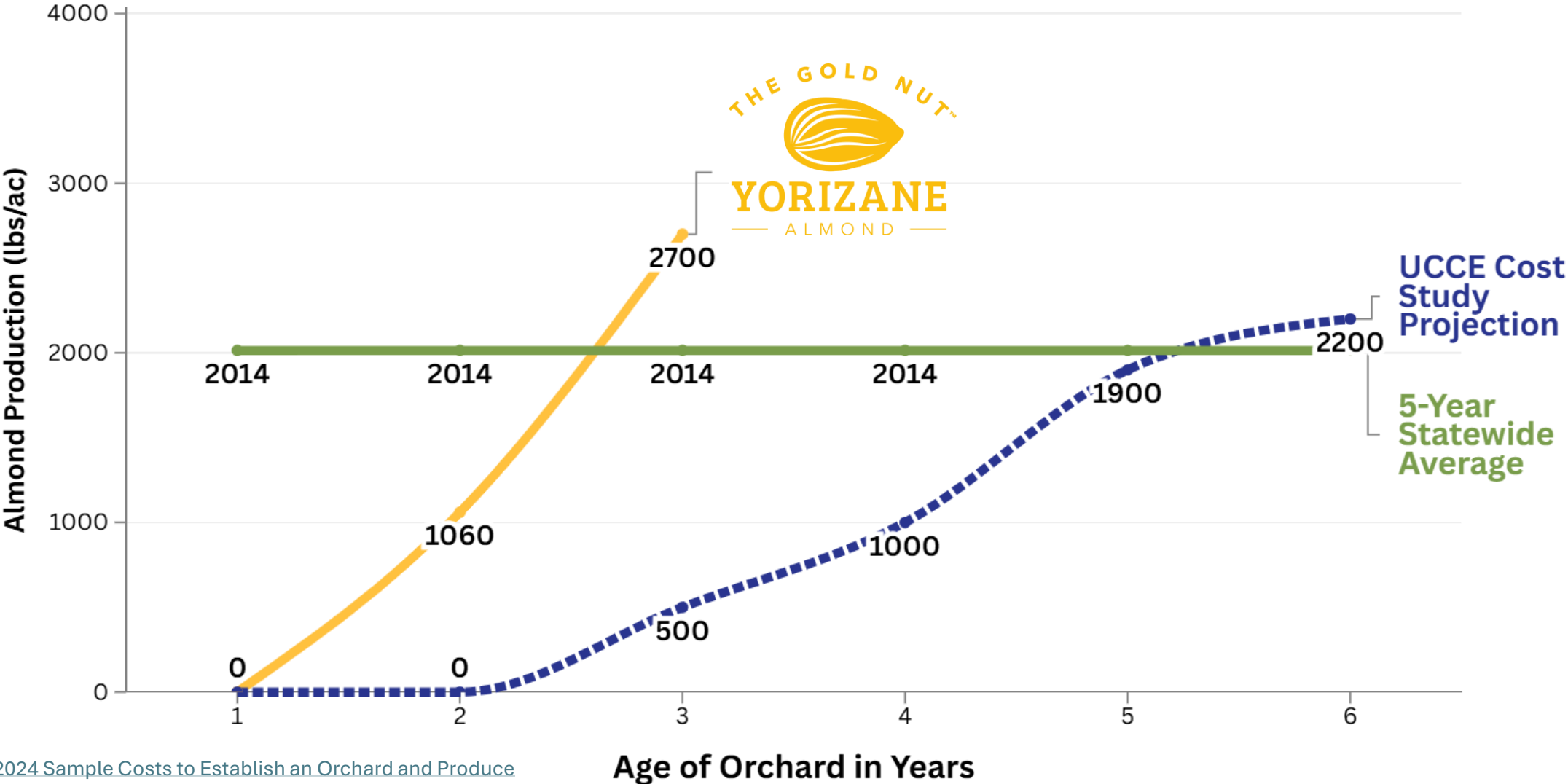
HIGHEST QUALITY • SELF-FERTILE • NO ROYALTY

Y116-161-99, Released by the U.S.D.A



2025 Yorizane Production at Duarte Dewitt Ranch (lb/ac)

20'x 10' spacing on Bright's Hybrid 5 rootstock.

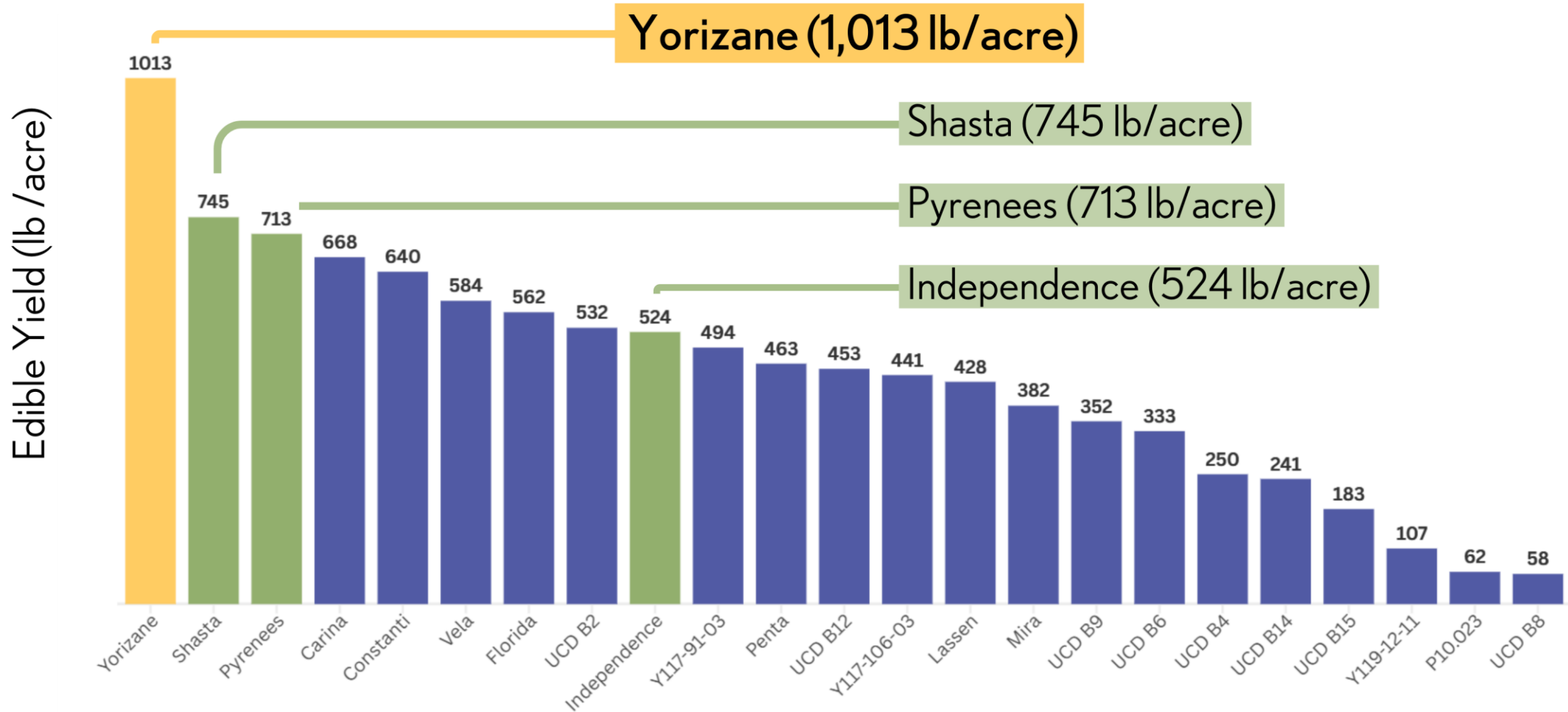


*UCCE, 2024 Sample Costs to Establish an Orchard and Produce Almonds: San Joaquin Valley North

**USDA, 2025 California Almond Objective Measurement Report

Dewitt Trial- 2024 Yield

Second-leaf yield of self-fertile almond varieties at trial



Regional Field Evaluation of New Almond Varieties and Selections

Roger Duncan, UCCE (2024)

Dewitt Trial- 2024 Comparison

		Nonpareil	Independence (Alm-21 cv.)
Harvest Time	-8 Days Before NP	0 Days	+11 Days After NP
Crackout %	63%	64%	66%
Naval Orange Worm %	1.0%	1.5%	1.5%
Kernel Weight (g/100 nuts)	1.22 g	1.10 g	1.24 g
2024 Yield	1013 lbs/acre	224 lbs/acre*	524 lbs/acre

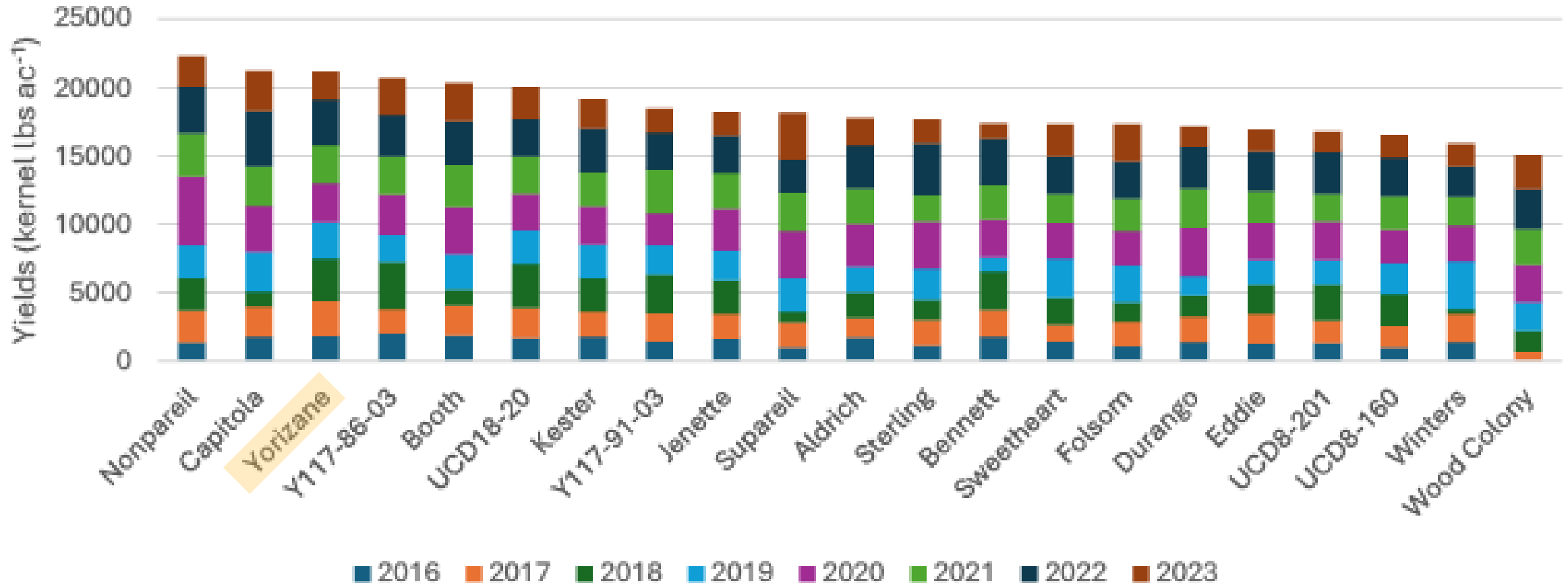
Regional Field Evaluation of New Almond Varieties and Selections

Roger Duncan, UC Cooperative Extension (2024)

*No bees were placed at this trial, Nonpareil harvest is innaccurately low

Average Kernel Yields

2016 - 2023, Regional Almond Variety Trial, Madera



2023 - 2024 Regional Almond Variety Trials

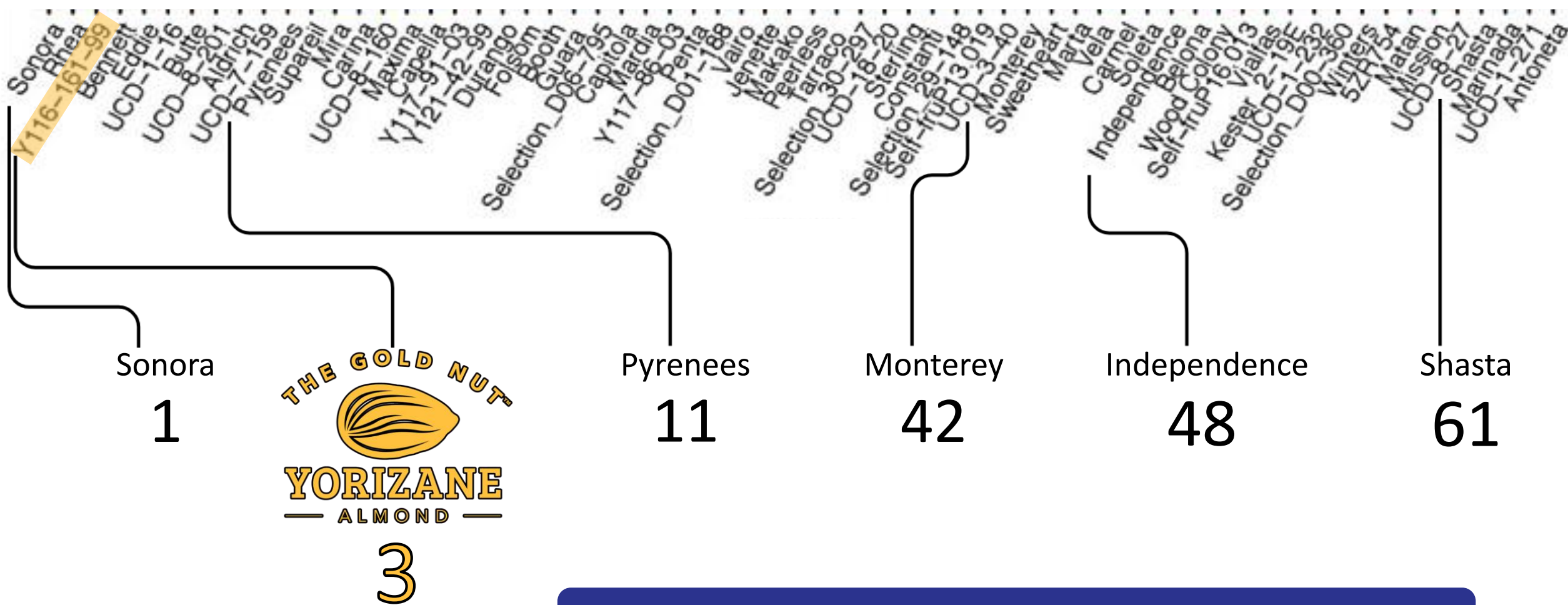
University of California Cooperative Extension (UCCE)

High Quality Nut

Yorizane

Nonpareil



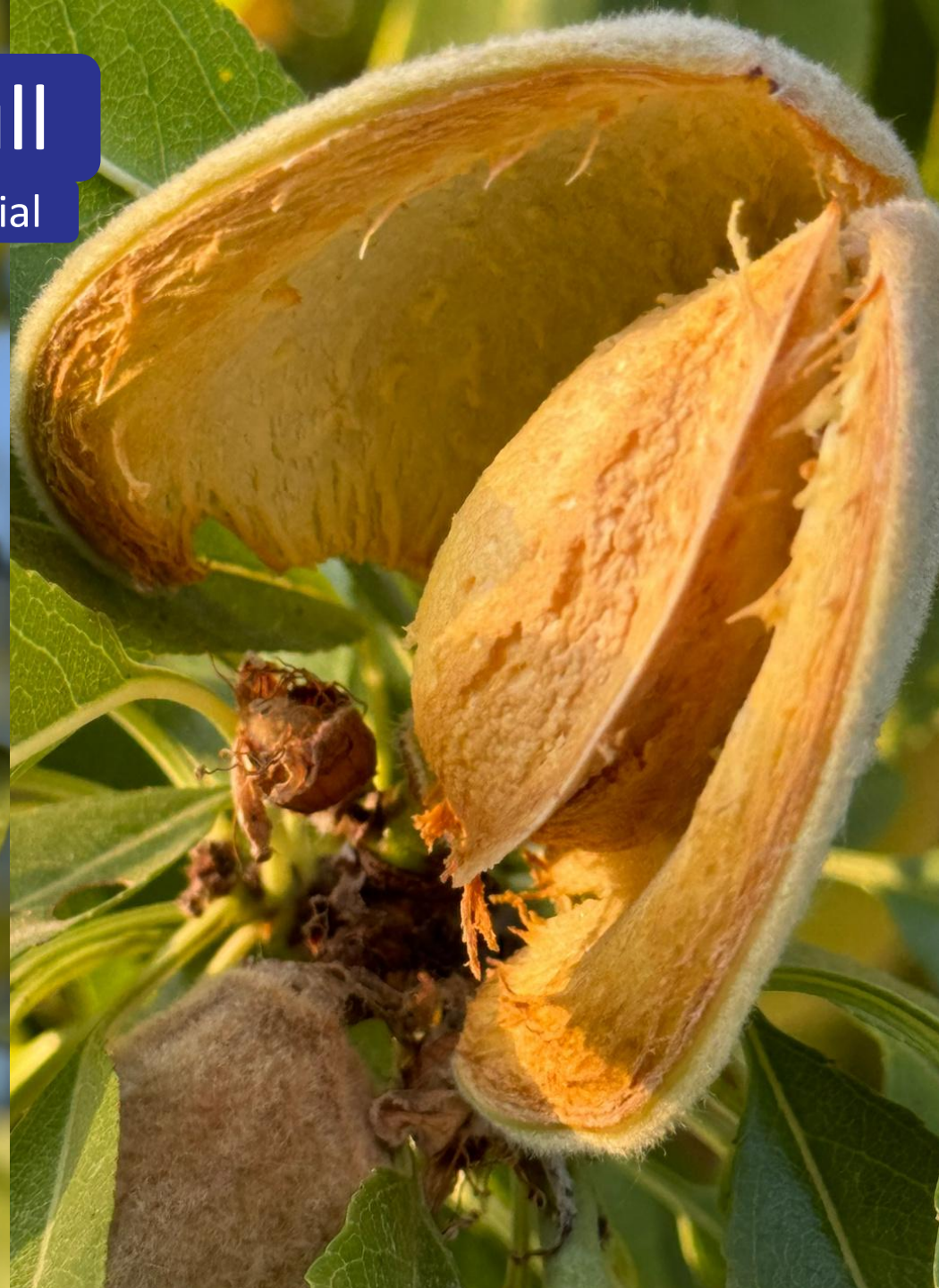


Hedonic Sums of Sensory Measures

2020, Almond Board of California

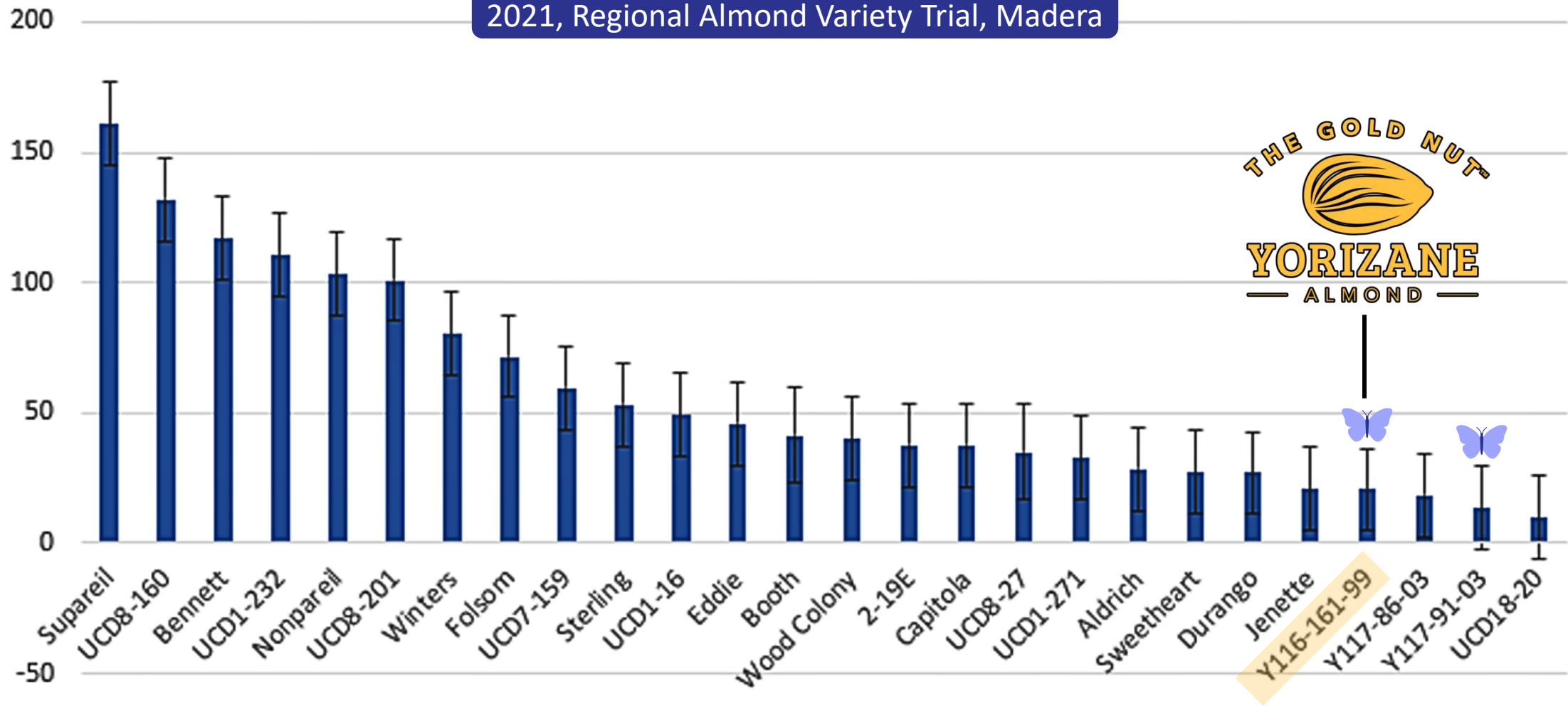
Butterfly Hull

July 16, 2024, Dewitt Trial



Hull Rot Strikes Per Tree

2021, Regional Almond Variety Trial, Madera



2021 Field Evaluation of Almond Varieties

University of California Cooperative Extension (UCCE)

Early, Clean, Fast Harvest

August 26, 2025, Duarte Dewitt Ranch, Modesto



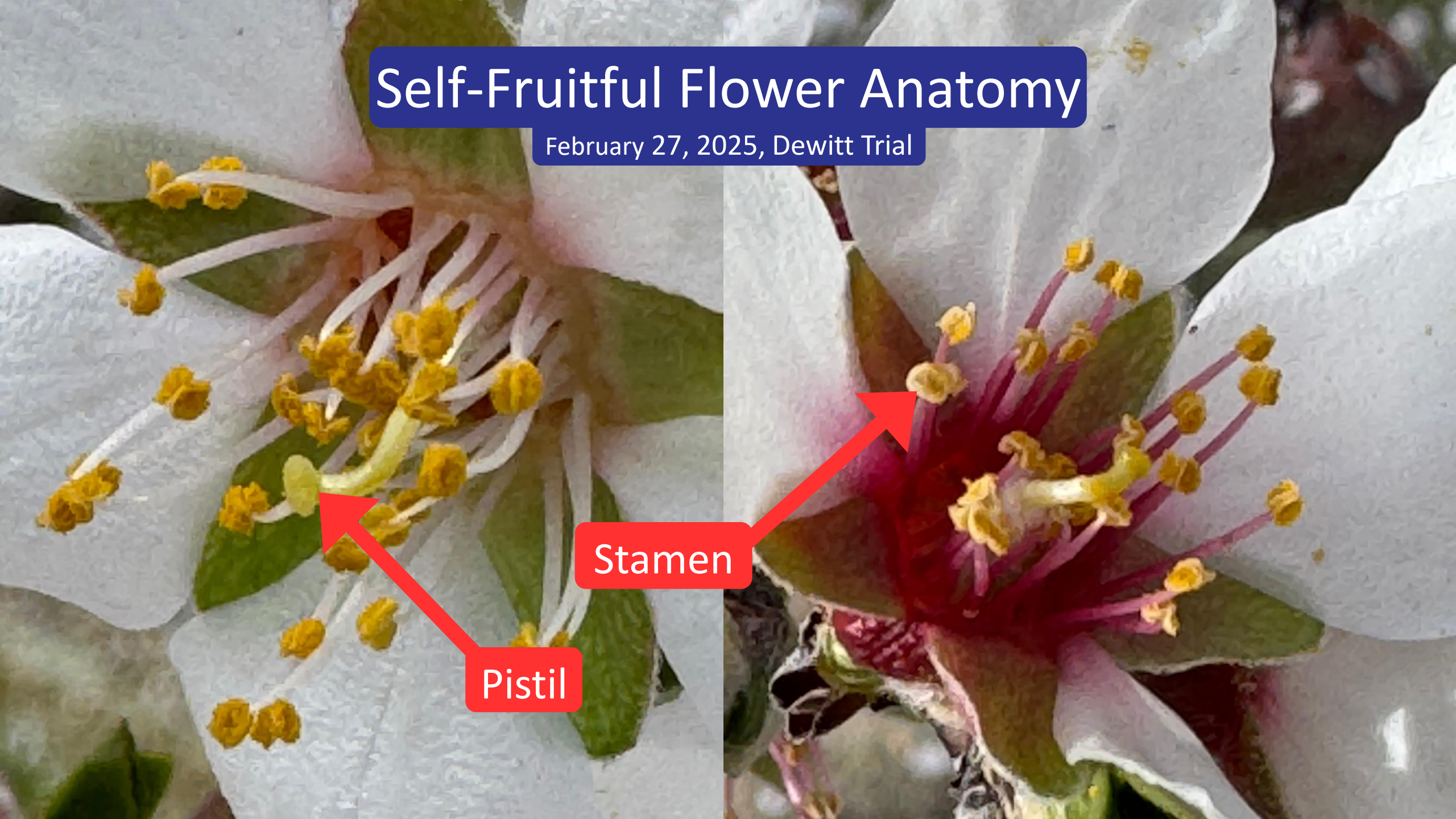
Early, Clean, Fast Harvest

August 26, 2025, Duarte Dewitt Ranch, Modesto



Self-Fruitful Flower Anatomy

February 27, 2025, Dewitt Trial



Pistil

Stamen

Self-Fruiting Experiment

Dewitt Trial



Trial Start Pre-Bloom
February 7, 2025

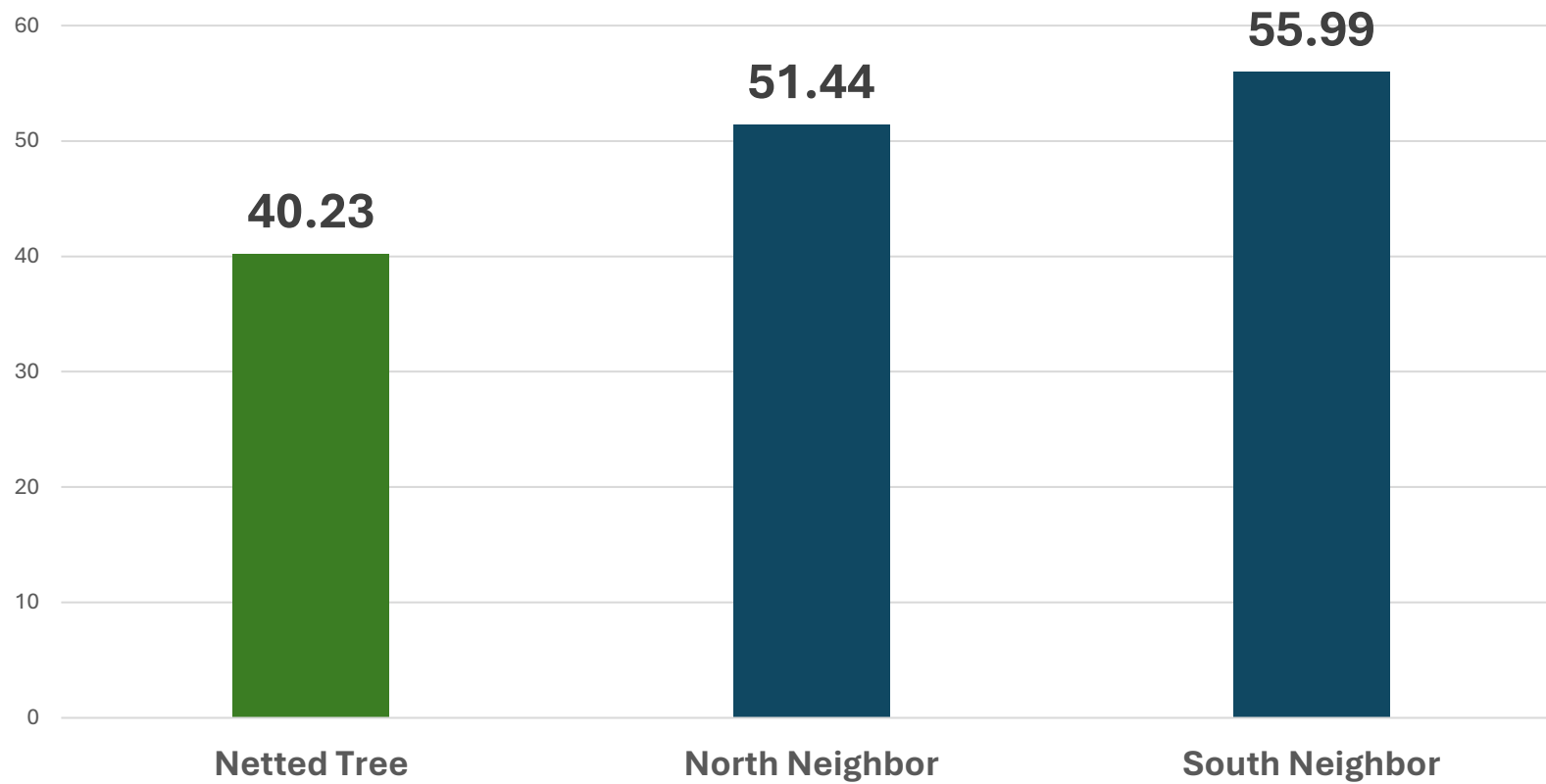


Net Removal Post-Bloom
March 19, 2025

Self-Fruiting Experiment

Dewitt Trial

Yorizane Self-Fruiting Trial Harvest Results (lbs)



Optimal Almond Orchard Features

Design Element	Description	Economic and Sustainability Benefits
Spacing	Moderate-to-high density, 10'-14' tree by 20'-21' row	Longer-lived orchards, reduced time to production, cleaner shaking, improved sanitation, optimized light capture
Pruning	No horticultural, operational pruning only	Lower labor and shredding costs, improved early yields, less wounds for disease entry
Rootstock	Rootstock selected for vigor, yield efficiency, and anchorage suitable to the site	Higher yields, higher input efficiency, longer productivity lifespan
Scion	Self-fertile and fruitful varieties with high yield efficiency	Higher yields, more precise inputs, lower bee costs, reduced weather risk
Training System	Planted to wire versus staking, allows for straighter trees	Straighter trees, more cost effective for higher density orchards, facilitates off-ground harvesting
Harvest Technology	Design orchard for off-ground harvest using catchframe or similar technology	One pass harvesting with reduced cost, more flexible orchard floor management, reduced dust, Air Board incentives, catchframe systems available during almond harvest
Nursery Stock	Containerized trees, high-top (48"-60") trees may be optimal	Lower disease risk, more flexible planting window, better long-term anchorage, more adaptable to hybrid rootstocks, high-top facilitates higher trunk and spaced scaffolding

Botanical Features of the Yorizane Almond

Botanical Feature	Description	Economic and Sustainability Benefits
Self-Fertile	The Yorizane accepts its own pollen for fertilization.	🍯 Single variety planting allows for one-time harvest and more precise inputs.
Self-Fruiting	The flower architecture of the Yorizane has the tip of the pistil at or below the height of the stamen, increasing self-fruitfulness.	🍯 Less bees are needed for pollination and reduces the risk of rain disrupting pollination.
Butterfly Hull	The hull of the Yorizane peels away from the nut while on the tree, creating a butterfly-shaped opening.	🍯 Allows for easy hulling and maximizes natural kernel drying. Potentially reduces hull rot strikes. 🌱 Less dust during harvest with off ground system
Early Harvest	In 2024, the Yorizane harvested 8 days before Nonpareil at Dewitt Ranch.	🍯 Reduces pest exposure, enables more post-harvest recovery, and is more adaptable to regions with shorter seasons. 🌱 Reduced pesticides
High Quality Nut	The Yorizane meets the criteria of an in-shell variety and roasts and blanches. It ranks very high on quality tests.	🍯 Premium pricing in market.
High Light-Yield Efficiency	The light-yield efficiency of the Yorizane on both Hansen and Bright's Hybrid 5 rootstocks ranks the highest of all varieties at the Dewitt Ranch Trial.	🍯 Better output per input, with more crop per acre. 🌱 More efficient inputs (Nitrogen, water, etc)
Easy Release	The Yorizane can be dried down below 10% on the tree and shakes clean in a few seconds.	🍯 Efficient shaking with lower sanitation costs. 🌱 Less dust during harvest with off ground system, reduced pesticides
Rootstock Compatible	The Yorizane is compatible with all major rootstocks. We find that it performs exceptionally well on vigorous selections such as Hansen and Bright's Hybrid 5.	🍯 Minimize risk to growers.
Good Canopy Architecture	The branches of the Yorizane are stable, and are not prone to significant willowing or bending. It resembles the Nonpareil in shape, but is smaller in size.	🍯 Trees support heavy crops and are more easily managed.
Extended and Dense Bloom	At the Dewitt Ranch in 2024 and 2025, the Yorizane had a notably extended and dense bloom.	🍯 Creates a hedge against unfavorable weather events during bloom.
Small-to-Medium Size Tree	According to the 2023-2024 Regional Variety Trials, Yorizane has 85-90% the PAR of Nonpareil.	🍯 Suited to medium-to-high-density orchards.

THE NEW KING
IS ROYALTY FREE

THE GOLD NUT™



YORIZANE
— ALMOND —

HIGHEST QUALITY • SELF-FERTILE • NO ROYALTY





Thank you