Understanding Cold Conditioning in Strawberry 2023-2026 *

California Berry Cultivars

Naturipe

UC Davis

Blazer-Wilkinson-Gee

UC Cooperative Extension

Introduction

- Explanation of what we will be looking at together
- Results from 2025-2026 for Watsonville and Santa Maria

- Summary and concluding thoughts

What happens to the plant in dormancy and afterwards:

- Toward the end of the growing season, as temperatures drop and light decreases, the plant slows down and moves sugars into reserves as starch.
- Given that the plant once taken out of storage has no leaves, the plant must draw on its stored reserves to grow new leaves and recommence producing its own sugars through photosynthesis.

Definition of chill in strawberry

- In-ground, field chill: Temperatures between 32 and 45 degrees.
- Supplemental chill: Post harvest, boxed plants. Temperatures held at steady (or close to it) 33- 34 degrees.

Why is this important?

- What is the right amount of in-field chill?
- What is the right amount of supplemental chill?

Starch determinations for chill adequacy

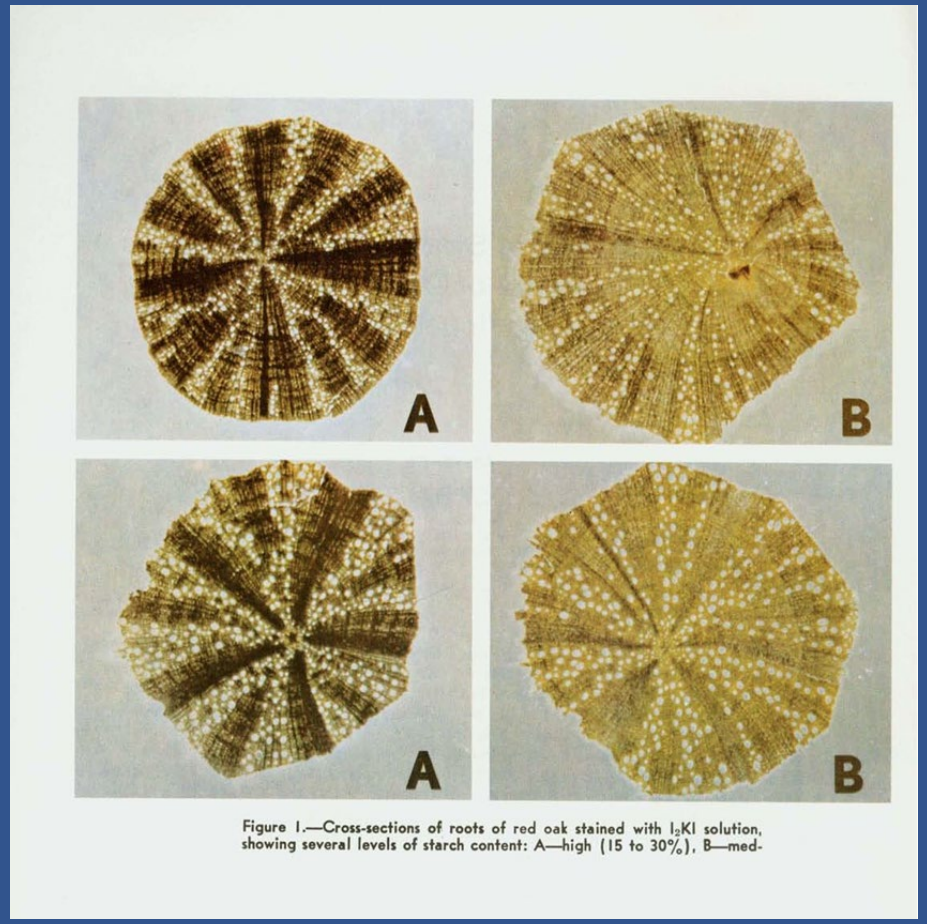
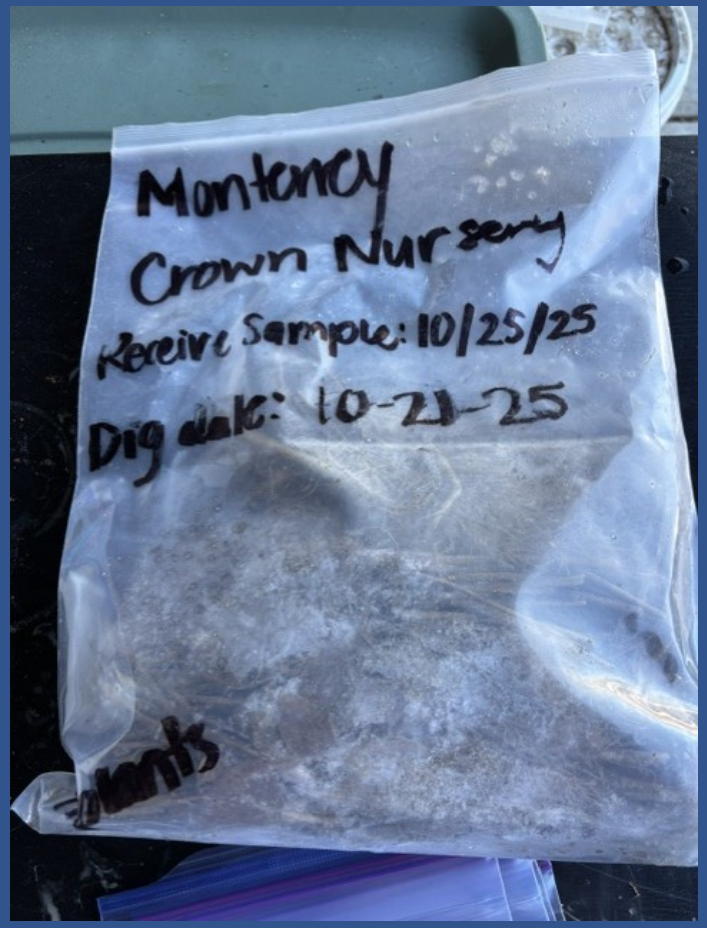
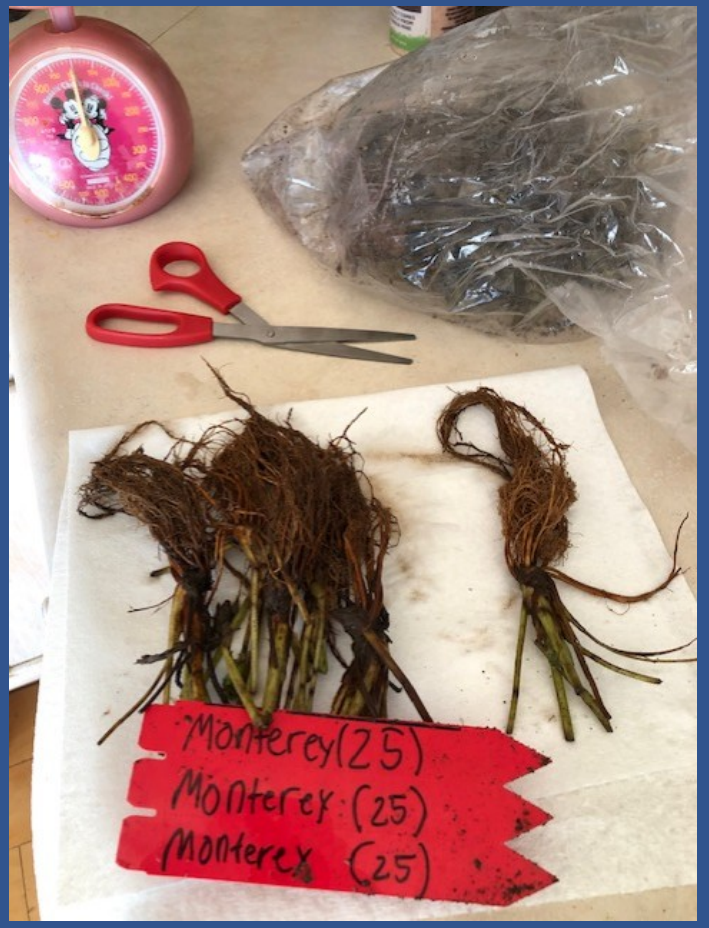


Figure 1.—Cross-sections of roots of red oak stained with I_2KI solution, showing several levels of starch content: A—high (15 to 30%), B—med-

Preparation of the samples





More preparation and shipment



Bag individually, freeze, store and ship to UC Davis Analytical Laboratory

UCDAVIS
Analytical Laboratory

2023-2024 CBC trial

- Variety Monterey
- Plants harvested 10/17/2023 (308 units chill)
- Final dig date on November 2 (449 units of chill)

Carbohydrate and Sugar Dynamics – Monterey

Monterey	Glucose %	Fructose %	Starch %
12-Sep	3.12	1.04*	2.26*
17-Oct (receipt)	3.7	2.48	15.9
1 wk hold	5.86*	4.14*	11.54
2 wk hold	5.28*	3.88*	8.8*
3 wk hold	4.3	3.96*	7.92*
2-Nov	4.0	3.5	15.8
1/30/2024	0.8*	0.58*	2.16*

* Significantly different from receipt sample at 95% confidence level.

5/27/2025	*1.37*	*1.05*	*1.7*

Santa Maria chill investigations

2025-26

Blazer Wilkinson Gee

Kim Rojas

Carbohydrate and Sugar Dynamics – Variety Fronteras

	Glucose %	Fructose %	Starch %
6-Oct (receipt)	3.3	2.1	11.3
13-Oct (1 wk hold)	5.2	3.9	10.0
20-Oct (2 wk hold)	4.9	3.9	7.1
27-Oct (3 wk hold)	5.5	4.4	4.9

Total hours of chill (33-45° F) at harvest – 153 hours



Fruit size in gram by month – Variety Fronteras

	Jan size	Feb size	Mar size	Apr size	May size
(1 wk hold)	38.7 a	39.6	36.7	25.4	23.3
(2 wk hold)	40.1 a	36.4	39.7	27.2	23.1
(3 wk hold)	11.2 b	36.1	39.2	29.0	22.7

Yield in 8 # crates per acre by month and total – Variety Fronteras

	Jan mkt	Feb mkt	Mar mkt	Apr mkt	May mkt	Ttl mkt
(1 wk hold)	542 a	756	36.7	2007	559	6131
(2 wk hold)	177 b	910	39.7	2188	675	6134
(3 wk hold)	8 b	533	39.2	2563	563	5422

Runnering – Variety Fronteras

	Runners - Jan	Runners - Feb	Runners - Mar	Runners - Apr
(1 week hold)	0.3	0	0.3	0.3
(2 week hold)	1.0	0	0	0.3
(3 week hold)	1.0	0.3	0	2.7

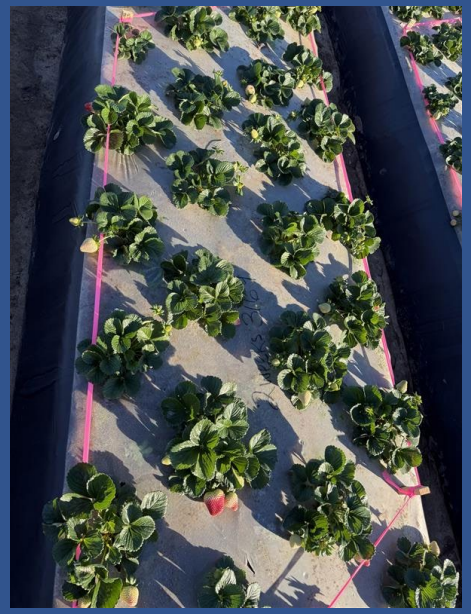
Percent of total fruit harvested - culls – variety Fronteras

	Jan	Feb	Mar	Apr	May
(1 week hold)	2.9	10.5	35.4	57.5	71.3
(2 week hold)	0	2.8	31.3	49.3	68.0
(3 week hold)	0	16.3	29.6	39.3	67.1

Percentages in sugar by supplemental storage duration – Variety 3169

	Glucose %	Fructose %	Starch %
2-Oct (receipt)	2.7	2.8	13.1
9-Oct (1 wk hold)	2.7	2.5	8.9
16-Oct (2 wk hold)	3.3	2.2	6.5
23-Oct (3 wk hold)	3.9	4.6	6.0

Total hours of chill (33-45° F) at harvest – 117 hours



Fruit size in grams by month – Variety 3169

	Jan size	Feb size	Mar size	Apr size	May size
(1 wk hold)	38.7	33.4	34.8 b	25.1	21.5
(2 wk hold)	44.7	41.3	40.5 a	25.6	22.4
(3 wk hold)	48.4	39.8	42.5 a	26.0	20.9

Yield in 8 # crates per acre by month and total – Variety 3169

	Jan mkt	Feb mkt	Mar mkt	Apr mkt	May mkt	Ttl mkt
(1 wk hold)	675 a	1170	2172	1524	319	5860
(2 wk hold)	354 b	872	2818	2203	403	6651
(3 wk hold)	120 c	692	2149	2497	346	5805

Runnering – Variety 3169

	Runners - Jan	Runners - Feb	Runners - Mar	Runners - Apr
(1 week hold)	0.3	0	0	0
(2 week hold)	0	0	0	0.7
(3 week hold)	0	0	0	1.3

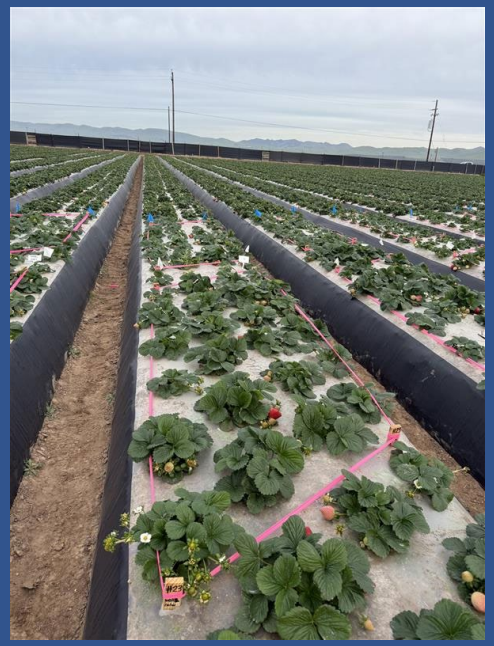
Percent of total fruit harvested - culls – variety 3169

	Jan	Feb	Mar	Apr	May
(1 week hold)	7.7	16.1	49.4	71.4 a	66.0
(2 week hold)	3.2	5.0	38.7	58.4 b	69.0
(3 week hold)	2.1	9.6	37.0	53.1 b	76.5

Percentages in sugar by supplemental storage duration – Variety Castaic

	Glucose %	Fructose %	Starch %
6-Oct (receipt)	1.7	1.6	8.6
13-Oct (1 wk hold)	2.3	2.0	6.3
20-Oct (2 wk hold)	2.5	2.8	5.7
27-Oct (3 wk hold)	3.3	2.6	4.1

Total hours of chill (33-45° F) at harvest – 153



Fruit size in g – Variety Castaic

	Jan size	Feb size	Mar size	Apr size	May size
(1 wk hold)	30.8	40.6	2503	23.5 b	21.5
(2 wk hold)	38.1	33.3	1474	25.3 ab	21.7
(3 wk hold)	10.8	29.7	1595	27.8 a	23.1

Yield in 8 # crates per acre by month and total – Variety Castaic

	Jan mkt	Feb mkt	Mar mkt	Apr mkt	May mkt	Ttl mkt
(1 wk hold)	330 a	570	2503	1077b	174	4654
(2 wk hold)	157 b	529	1474	2164a	304	4627
(3 wk hold)	15.5 b	461	1595	2624a	661	5356

Runnering – Variety Castaic

	Runners - Jan	Runners - Feb	Runners - Mar	Runners - Apr
(1 week hold)	7.1	0.3	0	0
(2 week hold)	0	0	0	0
(3 week hold)	0	0.7	0	0.6

Percent of total fruit harvested - culls – variety Castaic

	Jan	Feb	Mar	Apr	May
(1 week hold)	-	9.6	46.5	78.7	87.4
(2 week hold)	-	12.4	37.8	67.4	80.8
(3 week hold)	-	11.1	35.8	53.0	69.6

Percentage in sugar by supplemental sugar duration – Variety Belvedere

	Glucose %	Fructose %	Starch %
6-Oct (receipt)	3.1	2.3	11.9
13-Oct (1 wk hold)	3.8	3.2	8.9
20-Oct (2 wk hold)	4.1	3.1	6.3
27-Oct (3 wk hold)	5.3	3.4	5.9

Total hours of chill (33-45° F) at harvest – 153 hours



Fruit size in g – Variety Belvedere

	Jan size	Feb size	Mar size	Apr size	May size
(1 wk hold)	28.7	30.9	32.0	21.8	19.0
(2 wk hold)	27.4	26.0	32.7	23.6	21.2
(3 wk hold)	9.8	26.6	35.1	25.1	21.3

Yield in 8# crates per acre – Variety Belvedere

	Jan mkt	Feb mkt	Mar mkt	Apr mkt	May mkt	Ttl mkt
(1 wk hold)	362	876	1676	1857	497	5069
(2 wk hold)	119	660	1680	2205	699	5362
(3 wk hold)	117	488	1539	2263	674	5082

Runnering – Variety Belvedere

	Runners - Jan	Runners - Feb	Runners - Mar	Runners - Apr
(1 week hold)	0	0	0	5.3
(2 week hold)	0	0	0	31.0
(3 week hold)	0	0	0	26.0

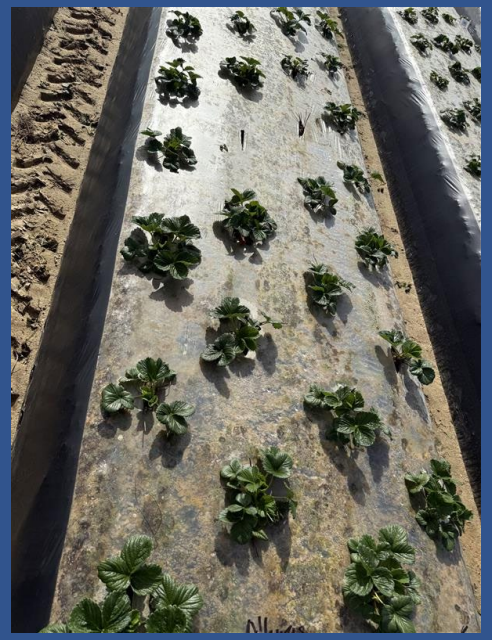
Percent of total fruit harvested - culls – variety Belvedere

	Jan	Feb	Mar	Apr	May
(1 week hold)	10.3	15.2	21.8	58.9	61.7
(2 week hold)	7.1	12.7	23.6	50.6	62.7
(3 week hold)	8.3	20.3	25.1	49.7	62.5

Percentages in sugar by supplemental storage duration – Variety Alturas

	Glucose %	Fructose %	Starch %
25-Oct (receipt)	2.7	2.6	8.2
1-Nov (1 wk hold)	2.8	3.0	6.4
7-Nov (2 wk hold)	2.9	3.4	5.2
12-Nov (3 wk hold)	2.6	2.5	4.5

Total hours of chill (33-45° F) at harvest – 315 hours



Fruit size in g – Variety Alturas

	Mar size	Apr size	May size	June size	July size
(1 wk hold)	44.5	35.3	30.2	27.5	22.6
(2 wk hold)	43.3	35.7	31.0	28.6	24.0
(3 wk hold)	46.2	28.2	31.2	28.8	24.3

Yield in 8# crates per acre and fruit size in gram by month – Variety Alturas

	Mar mkt	Apr mkt	May mkt	Jun mkt	July mkt	Ttl mkt
(1 wk hold)	841	2526	2397 b	3541	3622	12298 b
(2 wk hold)	856	2575	2958 a	3785	4051	14228 ab
(3 wk hold)	744	2630	3184 a	3933	4630	15123 a

Runnering – Variety Alturas

	Runners - Mar	Runners - Apr	Runners – May	Runners - Jun
(1 week hold)	0.3	6.7	7.7	4.0
(2 week hold)	0.7	3.3	16.3	4.0
(3 week hold)	2.3	11.0	10.7	8.7

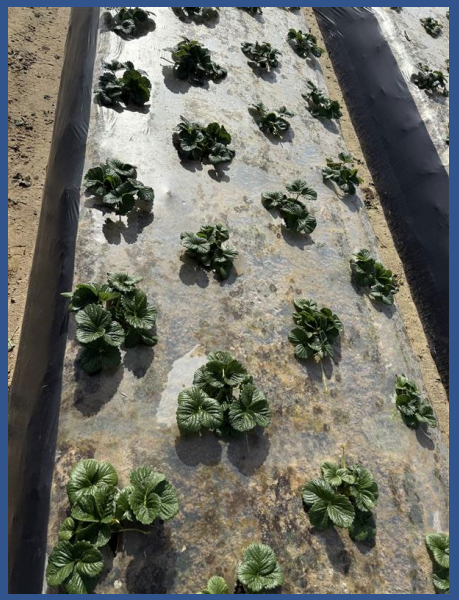
Percentage of total fruit harvested – cull – variety Alturas

	Mar	Apr	May	Jun	July
(1 week hold)	19.9	14.0	16.6	10.5	21.2
(2 week hold)	11.5	16.1	15.5	10.5	20.5
(3 week hold)	13.6	16.2	13.2	10.1	15.2

Percentages in sugar by supplemental storage duration – Variety Monterey

	Glucose %	Fructose %	Starch %
25-Oct (receipt)	2.8	2.9	13.9
1-Nov (1 wk hold)	2.9	3.4	9.4
7-Nov (2 wk hold)	3.7	3.3	9.3
12-Nov (3 wk hold)	3.7	3.9	8.5

Total hours of chill (33-45° F) at harvest – 315 hours



Fruit size in g – Variety Monterey

	Mar size	Apr size	May size	Jun size	July size
(1 wk hold)	38.6	28.3	22.2	24.9	22.6
(2 wk hold)	42.4	30.1	23.3	24.3	22.8
(3 wk hold)	45.2	31.5	28.5	23.5	23.5

Yield in 8# crates per acre and fruit size in gram by month – Variety Monterey

	Mar mkt	Apr mkt	May mkt	Jun mkt	July mkt	Ttl mkt
(1 wk hold)	894	2471	1832 b	22.6	3169	11004
(2 wk hold)	713	2608	2413 a	22.8	3215	11473
(3 wk hold)	798	2444	2576 a	23.5	3152	11949

Runnering - Monterey

	Runners - Mar	Runners - Apr	Runners - May	Runners - Jun	Runners - Jul
(1 week hold)	0	2.3	21.3	10.7	9.0
(2 week hold)	0.3	6.7	12.3	10.0	8.3
(3 week hold)	3.3	9.3	15.0	11.3	3.0

Percentage of total fruit harvested – culls – variety Monterey

	Mar	Apr	May	Jun	July
(1 week hold)	13.6	24.2	40.4	32.3 ab	31.0
(2 week hold)	13.2	19.5	35.7	34.5 a	29.5
(3 week hold)	12.6	18.5	34.3	28.9 b	30.2

Percentages in sugar by supplemental storage duration – Variety Artesia

	Glucose %	Fructose %	Starch %
21-Oct (receipt)	3.4	2.7	18.1
28-Oct (1 wk hold)	4.3	3.7	16.0
4-Nov (2 wk hold)	4.3	4.0	12.9
11-Nov (3 wk hold)	5.9	4.6	12.0

Total hours of chill (33-45° F) at harvest – 293 hours



Fruit size in g – Variety Artesia

	March size	April size	May size	June size	July size
(1 wk hold)	25.0	22.3	22.7	24.6	20.0
(2 wk hold)	27.8	24.8	22.9	25.0	19.5
(3 wk hold)	29.2	21.8	23.4	26.8	20.5

Yield in 8 # boxes/A – Variety Artesia

	Mar mkt	Apr mkt	May mkt	Jun mkt	July mkt	Ttl mkt
(1 wk hold)	288	211	1377	4938	1114	7927
(2 wk hold)	233	313	1541	4977	1178	8243
(3 wk hold)	120	205	1711	4792	1209	8039

Runnering – Variety Artesia

	Runners - Mar	Runners - Apr	Runners - May	Runners - Jun
(1 week hold)	0	0	0	2.7
(2 week hold)	0	0	0.3	0
(3 week hold)	0	0.3	0	1.3

Percentage of total fruit harvested – culls – variety Artesia

	Mar	Apr	May	Jun	July
(1 week hold)	52.8	86.0	42.7	26.7	64.0
(2 week hold)	56.0	77.1	40.6	30.3	64.7
(3 week hold)	66.0	80.2	35.5	29.0	60.5

Naturipe Study
2024-2025
2025-2026

Hillary Thomas

Marisol Magaña

Mitchell Feldman, Allison Krill Brown, Cynthia Lopez

Introduction

- Evaluate the physiological changes the strawberry varieties Monterey, Eclipse, Golden Gate, Monarch and Keystone undergo during field and supplemental chill. Evaluate the field performance of these varieties exposed to three variations of supplemental chill.

- 2024: 0 weeks chill (Nov 1,2024), 1 week of chill (Nov 7, 2024) and 2 weeks of chill (Nov 14, 2024). Chill accumulation at harvest (Oct 30)= 411 hours.

- 2025: 0 weeks chill (Oct 29,2025), 1 week of chill (Nov 6, 2025) and 2 weeks of chill (Nov 13, 2025). Chill accumulation at harvest (Oct 29) = 393 hours

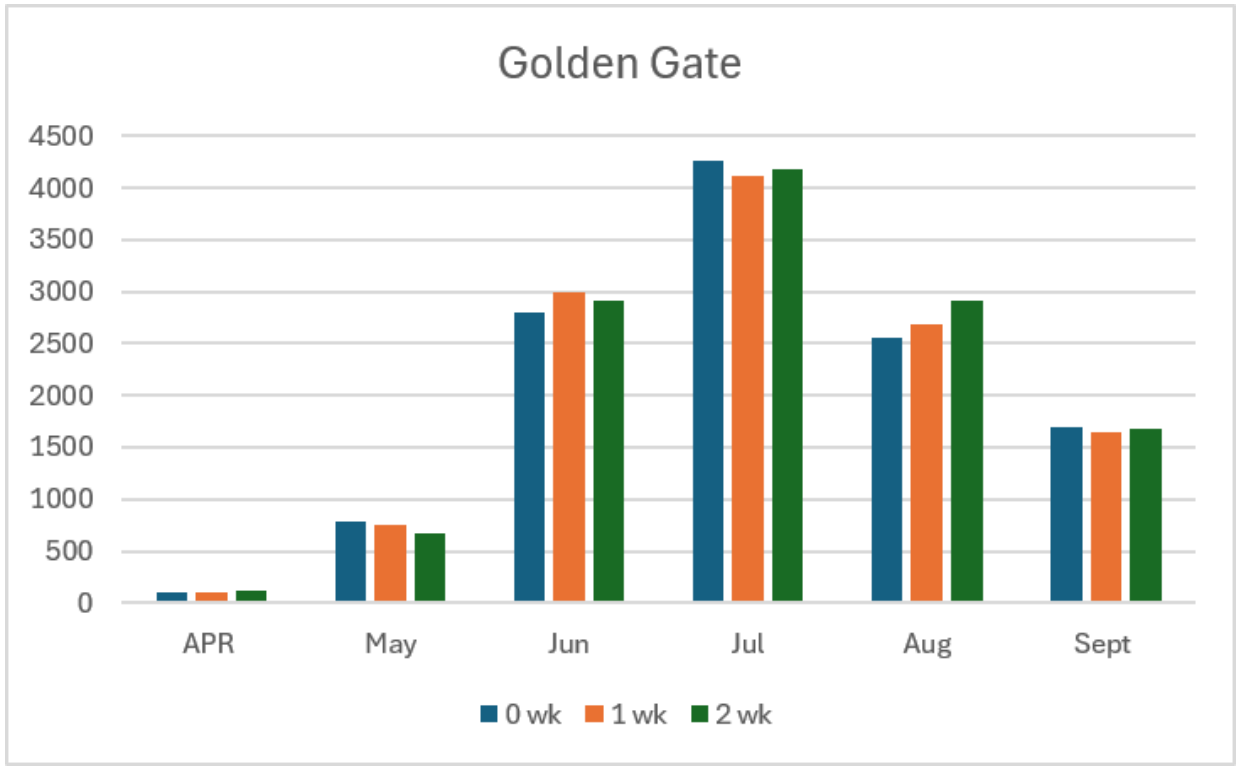
Test Plot: Naturipe Research Farm, Salinas



Variety 2024-2025	Weeks cold storage	Glucose (%)	Fructose (%)	Starch (%)
Golden Gate	0	3.0	3.0	10.9
Golden Gate	1	2.9	2.5	12.1
Golden Gate	2	3.5	3.3	6.4
Eclipse	0	3.4	3.7	9.0
Eclipse	1	4.1	3.8	5.2
Eclipse	2	5.0	5.1	5.5
Keystone	0	4.8	4.2	10.0
Keystone	1	3.7	3.3	10.8
Keystone	2	4.0	3.7	8.4
Monarch	0	4.3	3.9	15.6
Monarch	1	5.2	4.6	13.7
Monarch	2	4.4	3.3	11.1
Monterey	0	3.8	3.8	12.3
Monterey	1	3.1	4.0	14.3
Monterey	2	4.8	4.4	11.5

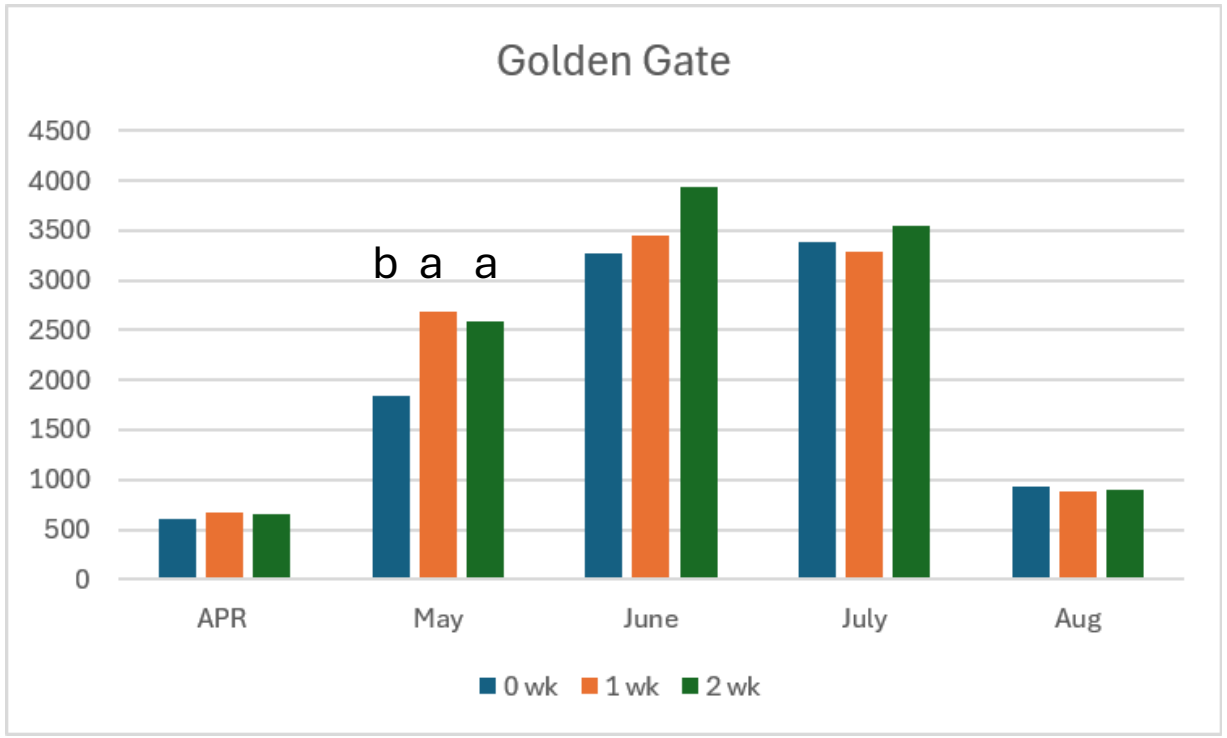
Variety 2025-2026	Weeks cold storage	Glucose (%)	Fructose (%)	Starch (%)
Golden Gate	0	2.7	2.3	11.9
Golden Gate	1	2.9	2.8	11.8
Golden Gate	2	4.1	4.2	9.0
Eclipse	0	1.7	2.4	11.4
Eclipse	1	2.6	3.2	10.0
Eclipse	2	3.5	4.2	8.5
Keystone	0	3.1	2.7	16.2
Keystone	1	2.3	2.5	14.9
Keystone	2	4.3	4.2	14.5
Monarch	0	2.1	2.2	12.0
Monarch	1	3.1	3.0	11.4
Monarch	2	3.2	3.3	10.5
Monterey	0	2.3	2.3	12.7
Monterey	1	2.5	2.5	11.1
Monterey	2	3.8	3.4	10.2

2025



Supplemental Chill	Yield in 8 # crate / acre
0 weeks	12,209
1 week	12,300
2 weeks	12,484

2026



Supplemental Chill	Yield in 8 # crate / acre
0 weeks	10,026
1 week	10,982
2 weeks	11,636

Runners - Golden Gate

2025	Runners - Apr	Runners - May	Runners - June	Runners - July	Runners - August	ttl
(0 week hold)	0.0	34.7 b	71.3 b	53.6	22.6	182.3
(1 week hold)	0.7	71.7 a	109.0 a	62.3	36.3	280.0
(2 week hold)	2.3	81.3 a	110.7 a	49.0	22.3	265.7

2026	Runners - Apr	Runners - May	Runners - June	Runners - July	Runners - August	ttl
(0 week hold)	2.7 b	20.3 b	12.6	25.0	16.3	77.0
(1 week hold)	3.7 b	39.3 b	14.0	29.3	21.3	107.7
(2 week hold)	20.7 a	65.0 a	21.0	24.7	16.7	148.0

Percent culls – Golden Gate

2025	Apr	May	June	July	August	Sept	ttl
(0 week hold)	49.7 a	42.1	27.7	20.3	32.5	27.7	28.5
(1 week hold)	45.6 a	46.5	27.5	21.4	31.1	32.7	29.4
(2week hold)	35.4 b	43.2	29.2	22.0	30.7	29.9	28.7

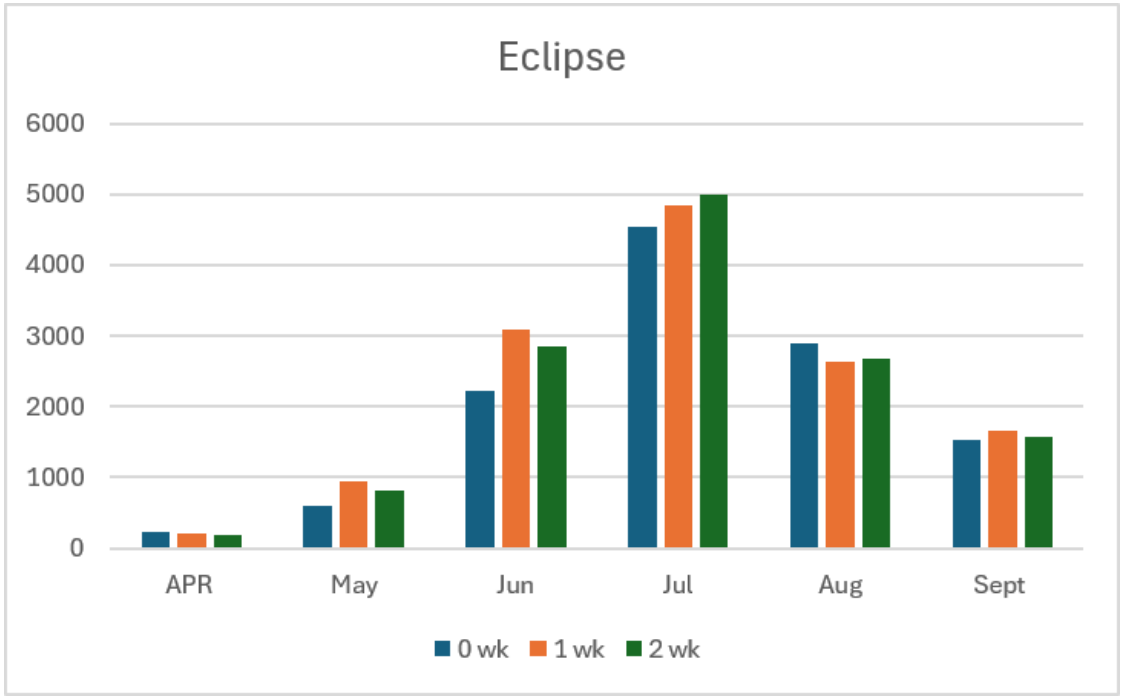
2026	Apr	May	June	July	August	ttl
(0 week hold)	29.7	31.9	23.3	31.9	51.5	32.5
(1 week hold)	27.3	28.8	26.9	33.9	55.5	34.0
(2week hold)	26.5	29.8	26.6	34.6	56.5	34.5

Fruit size in g – Golden Gate

2025	Apr size	May size	June size	July size	August size	Sept size
(0 wk hold)	36.0	35.3	36.0	31.0	23.4	20.8
(1 wk hold)	31.9	35.2	32.2	29.5	24.8	21.1
(2 wk hold)	33.4	35.3	33.1	31.8	24.2	21.1

2026	Apr size	May size	June size	July size	August size
(0 wk hold)	26.1	28.2	25.4	22.8	19.3
(1 wk hold)	27.1	28.7	25.5	22.7	19.1
(2 wk hold)	31.9	30.2	25.4	23.4	18.7

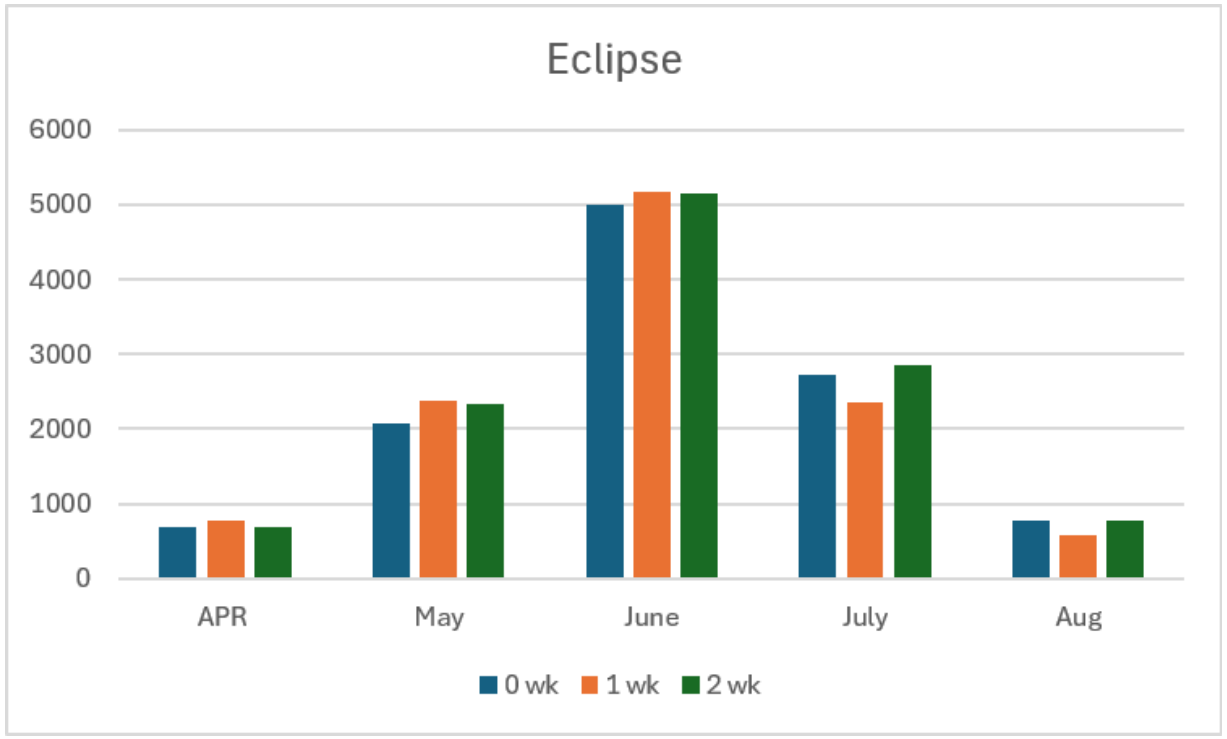
Eclipse yield in 8# crates per acre



2025

Supplemental Chill	Yield in 8 # crate / acre
0 weeks	12,000 b
1 week	13,357 a
2 weeks	13,090 a

Eclipse yield in 8# crates per acre



2026

Supplemental Chill	Yield in 8 # crate / acre
0 weeks	11,237
1 week	11,281
2 weeks	11,798

Runners - Eclipse

2025	Runners - Apr	Runners - May	Runners - June	Runners - July	Runners – August	Runners - ttl
(0 week hold)	14.3 b	76.7	70.3 b	36.3	17.2	214.8
(1 week hold)	19.0 b	113.3	87.3 a	35.3	35.3	290.2
(2 week hold)	38.3 a	108.7	73.7 b	28.0	28.0	276.7

2026	Runners - Apr	Runners - May	Runners - June	Runners - July	Runners - August	Runners - ttl
(0 week hold)	49.3 b	78.0	48.0 a	29.7	32.3	237.3 a
(1 week hold)	58.7 b	92.7	31.3 b	32.0	14.7	229.3 b
(2 week hold)	99.3 a	108.3	55.3 a	33.0	24.0	320.0 a

Percent culls - Eclipse

2025	Apr	May	June	July	August	Sept	ttl
(0 week hold)	45.3	52.2	39.0	27.1	32.3	23.6	31.7
(1 week hold)	46.2	44.6	33.5	27.5	36.2	23.2	31.5
(2week hold)	44.7	49.7	35.3	23.6	34.5	23.0	30.5

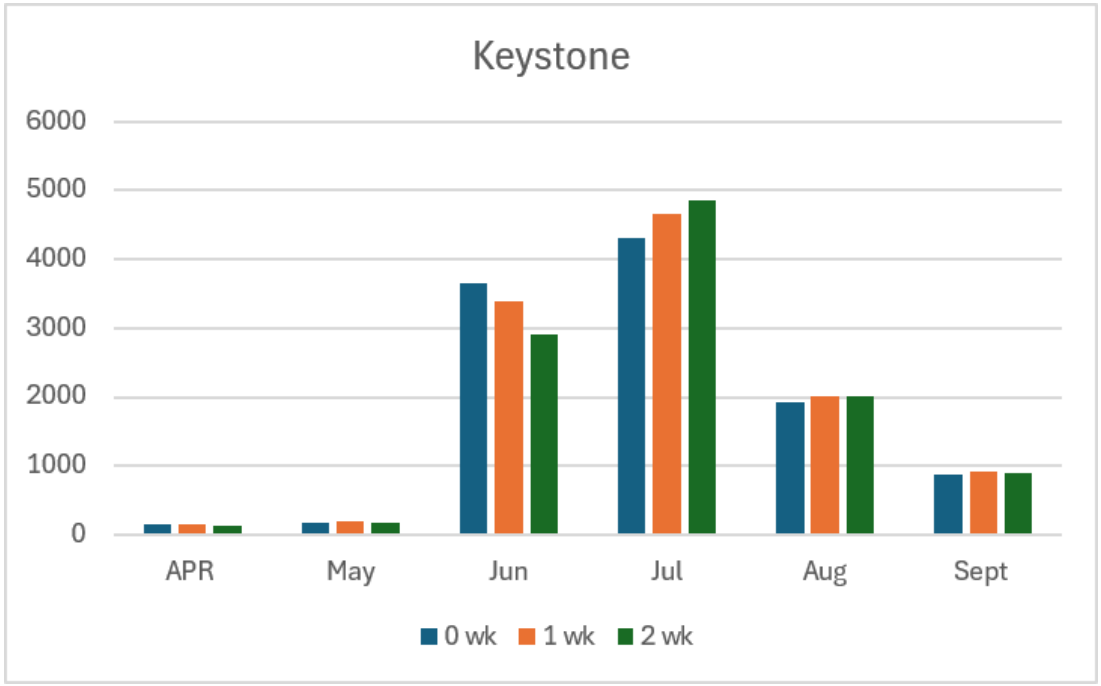
2026	Apr	May	June	July	August	ttl
(0 week hold)	25.7	30.9	20.9	41.0	48.7	32.6
(1 week hold)	24.7	27.5	21.4	44.2	56.6	33.6
(2week hold)	24.5	26.1	22.2	39.6	51.0	32.3

Fruit size in g Eclipse

2025	Apr size	May size	June size	July size	August size	Sept size
(0 wk hold)	35.0	43.9	37.0	32.6	24.3	22.2
(1 wk hold)	40.1	43.7	35.9	31.4	27.2	21.2
(2 wk hold)	37.8	45.0	37.5	33.0	24.1	21.4

2026	Apr size	May size	June size	July size	August size
(0 wk hold)	35.4	34.3	29.4	23.2	19.3
(1 wk hold)	37.7	32.5	28.3	22.0	18.5
(2 wk hold)	38.5	33.6	30.9	23.3	19.7

Keystone Yield in 8 lb boxes/Acre

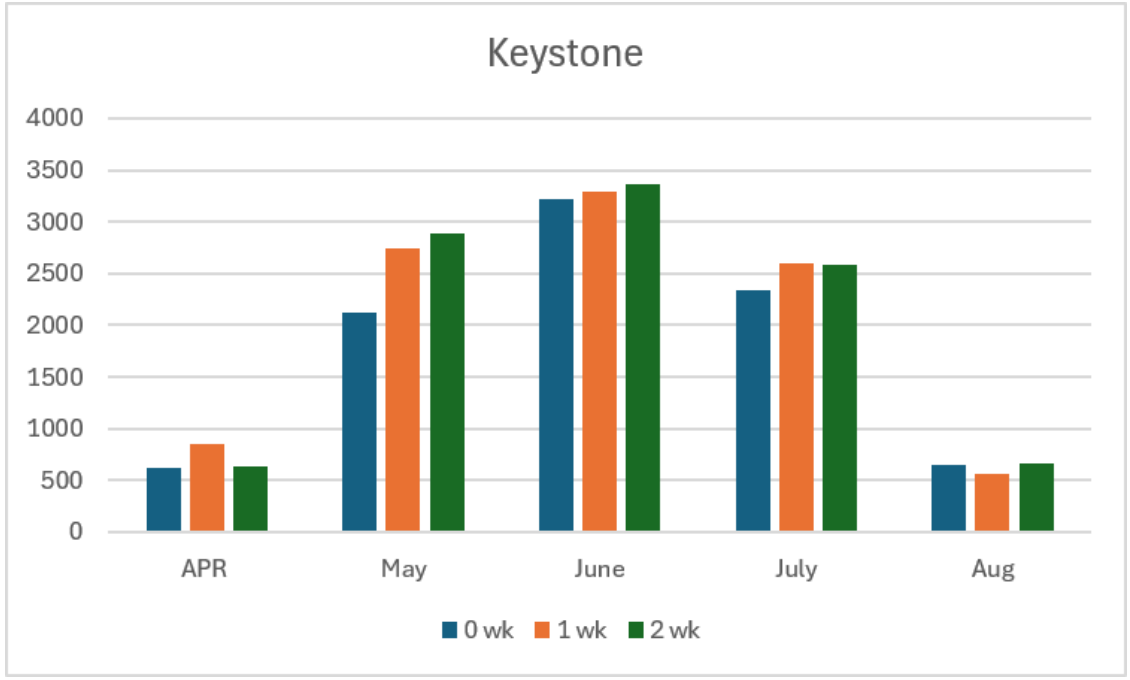


2025

Supplemental Chill	Yield in 8 # crate / acre
0 weeks	11,093
1 week	11,324
2 weeks	10,993

Keystone Yield in 8 lb boxes/Acre

2026



Supplemental Chill	Yield in 8 # crate / acre
0 weeks	8933
1 week	10,029
2 weeks	10,107

Runnering - Keystone

	Runners - Apr	Runners - May	Runners - June	Runners - July
(0 week hold)	0.0 b	12.9	32.8	24.0
(1 week hold)	1.3 ab	28.4	74.8	25.0
(2 week hold)	3.3 a	61.5	59.8	26.0

	Apr	May	Jun	July	August	Sept
(0 week hold)	63.9	37.0	31.9	28.5	31.9 b	37.2
(1 week hold)	58.4	40.3	31.9	28.9	37.6 a	35.4
(2 week hold)	52.5	37.3	31.9	25.1	34.0 ab	35.8

Percent culls - Keystone

2025	Apr	May	June	July	August	Sept	ttl
(0 week hold)	63.9	37.0	31.9	28.5	31.8	37.2	31.0
(1 week hold)	58.4	40.3	31.9	28.9	37.6	35.4	32.6
(2week hold)	52.6	37.3	32.0	25.2	34.0	35.8	29.7

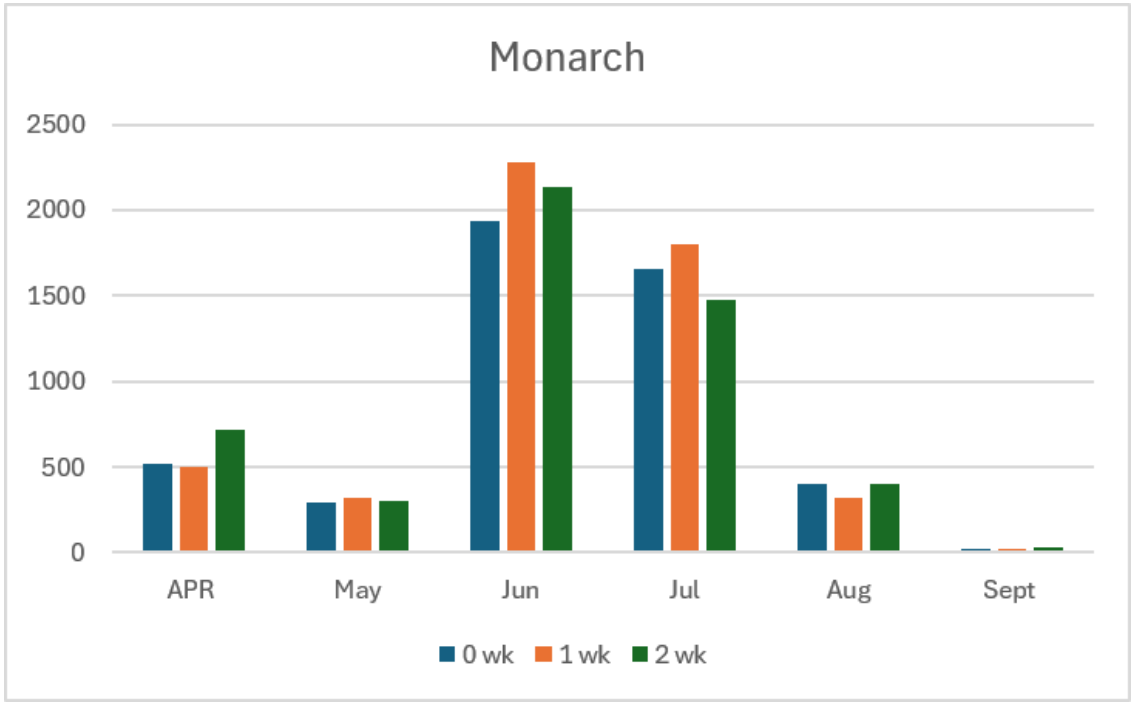
2026	Apr	May	June	July	August	ttl
(0 week hold)	33.2	28.0	26.3	42.7	50.6	38.8
(1 week hold)	24.6	29.5	27.4	41.6	59.0	35.8
(2week hold)	22.0	31.4	30.6	40.8	59.6	37.2

Fruit size in g - Keystone

2025	Apr size	May size	June size	July size	August size	Sept size
(0 wk hold)	32.2	34.8	33.5	29.6	21.2	18.5
(1 wk hold)	32.4	35.0	32.5	28.2	24.2	18.0
(2 wk hold)	32.0	36.2	33.1	28.2	21.8	18.6

2026	Apr size	May size	June size	July size	August size
(0 wk hold)	30.2	28.0	23.8	20.2	18.5
(1 wk hold)	32.5	29.5	23.7	19.6	16.9
(2 wk hold)	36.0	31.5	23.7	20.5	17.6

Monarch yield in 8# crates per acre

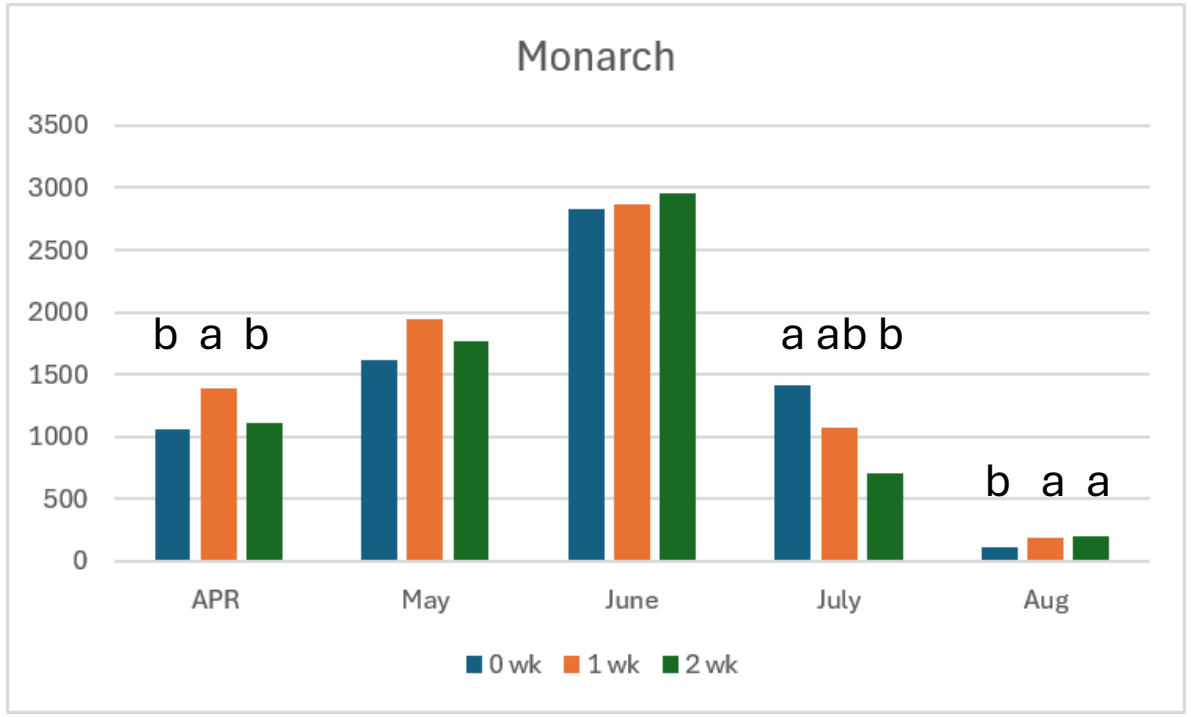


2025

Supplemental Chill	Yield in 8 # crate / acre
0 weeks	4829
1 week	5255
2 weeks	5064

2026

Monarch yield in 8# crates per acre



Supplemental Chill	Yield in 8 # crate / acre
0 weeks	7041
1 week	7454
2 weeks	6729

Runners - Monarch

2025	Runners - Apr	Runners - May	Runners - June	Runners - July
(0 week hold)	0.67	21.7 b	96.0	334.0
(1 week hold)	1.0	43.3 ab	104.0	416.3
(2week hold)	1.3	64.0 a	126.7	524.7

2026	Runners - Apr	Runners - May	Runners - June	Runners - July	Runners - Aug	Runners -ttl
(0 week hold)	0.0	6.3 b	6.3	93.0	349.0	455.0
(1 week hold)	2.3	8.7 b	7.7	51.3	221.0	291.0
(2week hold)	9.0	26.0 a	15.7	58.3	157.0	266.0

Percent culls - Monarch

2025	Apr	May	June	July	August	Sept	ttl
(0 week hold)	35.9	42.4 a	33.7	22.8	37.8	39.6	
(1 week hold)	41.7	44.3 a	33.6	24.4	41.5	38.6	
(2week hold)	32.9	32.0 b	32.7	25.3	35.3	47.4	

2026	Apr	May	June	July	August	ttl
(0 week hold)	22.5 a	45.1	37.9	62.4	86.8	50.2
(1 week hold)	16.8 b	48.4	46.5	66.7	83.8	53.8
(2week hold)	16.6 b	48.9	47.8	71.9	84.2	56.2

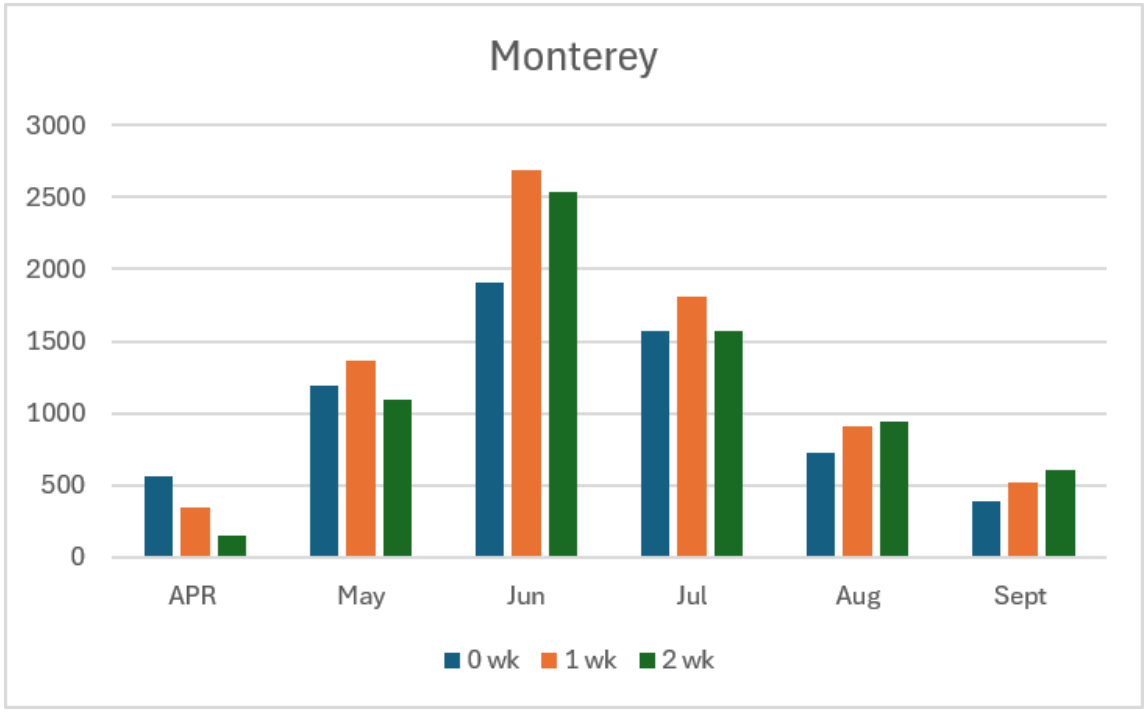
Fruit size – Monarch

2025	Apr size	May size	June size	July size	August size	Sept size
(0 wk hold)	32.5	35.8	29.7	29.3	23.7	17.1
(1 wk hold)	29.7	34.2	29.3	27.2	26.9	18.0
(2 wk hold)	27.7	37.2	33.2	31.7	23.4	20.6

2026	Apr size	May size	June size	July size	August size
(0 wk hold)	25.6 c	22.8	19.2	16.6	13.4
(1 wk hold)	28.2 b	23.0	18.5	15.8	14.0
(2 wk hold)	33.3 a	25.0	19.1	15.5	14.0

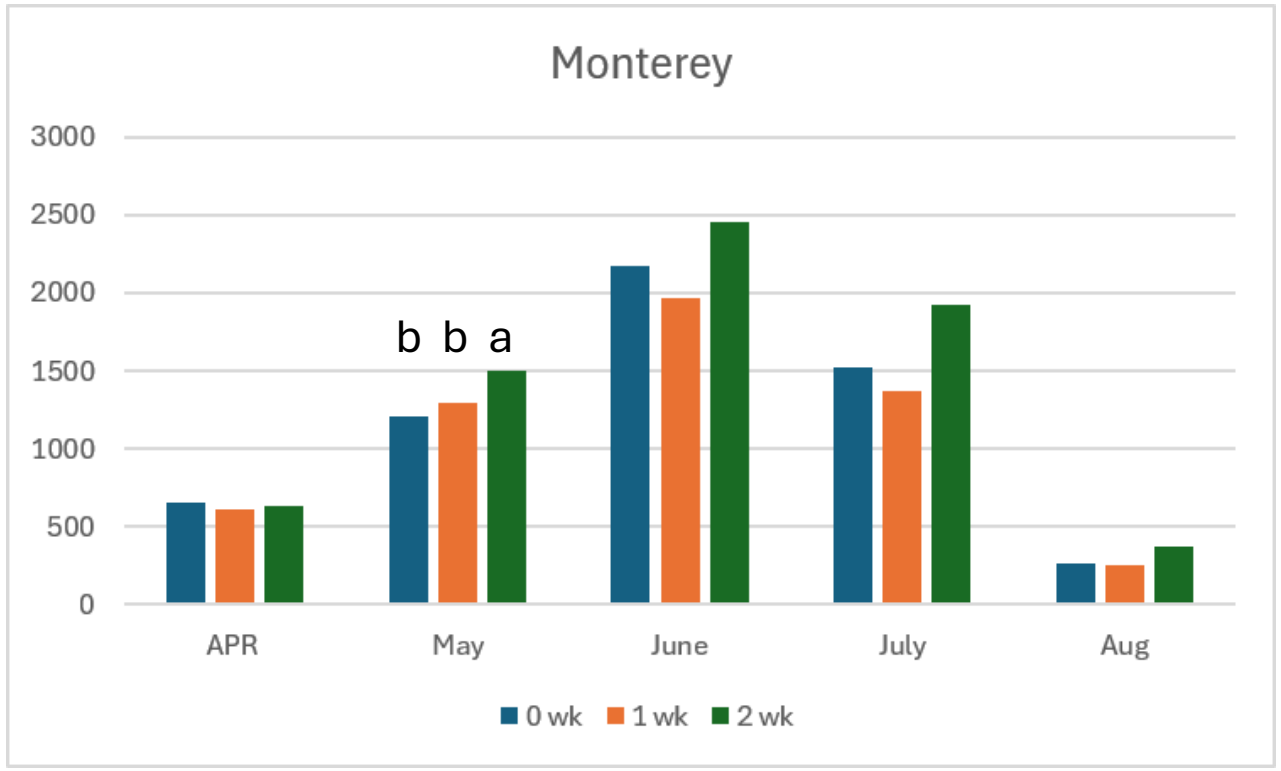
Monterey yield in 8# crates per acre

2025



Supplemental Chill	Yield in 8 # crate / acre
0 weeks	6351
1 week	7641
2 weeks	6892

Monterey yield in 8# crates per acre



2026

Supplemental Chill	Yield in 8 # crate / acre
0 weeks	5819
1 week	5489
2 weeks	6886

Runners - Monterey

2025	Runners - Apr	Runners - May	Runners - June	Runners - July	Runners - ttl
(0 week hold)	6.0 b	101.6	113.3	67.0	
(1 week hold)	20.7 a	140.0	91.6	73.7	
(2 week hold)	28.3 a	151.7	128.3	84.0	

2026	Runners - Apr	Runners - May	Runners - June	Runners - July	Runners - Augusts	Runners-ttl
(0 week hold)	5.0 c	46.7 b	41.0 ab	34.0	25.7	152.3 b
(1 week hold)	17.3 b	43.7 b	26.3 b	28.7	18.3	134.3 b
(2 week hold)	35.3 a	108.3 a	53.7 a	45.0	20.3	252.7 a

Percent culls - Monterey

2025	Apr	May	June	July	August	Sept	ttl
(0 week hold)	17.5	34.8	37.7	37.9	43.9	31.5	36.7
(1 week hold)	24.3	29.4	36.0	39.6	39.3	32.0	35.9
(2week hold)	30.7	32.4	37.4	39.2	41.0	29.1	36.7

2026	Apr	May	June	July	August	ttl
(0 week hold)	32.9	40.9	30.0	41.4	56.9	38.5
(1 week hold)	34.5	41.8	31.6	39.8	56.2	37.6
(2week hold)	27.2	37.7	30.0	37.7	57.9	36.5

Fruit size in g - Monterey

2025	Apr size	May size	June size	July size	August size	Sept size
(0 wk hold)	41.4	37.2	29.7	26.8	21.9	18.7
(1 wk hold)	46.8	35.8	29.6	24.6	22.0	18.7
(2 wk hold)	44.2	36.6	31.8	27.1	20.6	18.0

2026	Apr size	May size	June size	July size	August size
(0 wk hold)	29.1	25.1	23.4	21.5	18.3
(1 wk hold)	28.9	24.7	22.0	21.2	19.7
(2 wk hold)	29.1	26.3	22.6	21.5	18.6

Concluding Slide

- The effects on the strawberry plant of field chill and supplemental chill are qualitatively different.
- The effects of chill on subsequent plant performance in the production field can affect certain varieties, others not so much.
- It is becoming apparent that strawberry plants accumulate starch very quickly in the right conditions.

- Thank you to the many people involved in this work!