



UC DAVIS STRAWBERRY BREEDING PROGRAM SHORT DAY & DAY NEUTRAL CULTIVAR RELEASES

LOMPOC, CA
MAY 16, 2024

UC SURFLINE – Short Day

- ❖ Production starts earlier than Fronteras, overall higher marketable yields than Fronteras (up to 43%) through the season.
- ❖ Performs better in short-day environments with at least 200 hours of in field nursery chill.
- ❖ Improved firmness and shelf-life compared to Fronteras.
- ❖ Resistant to Fusarium and Phytophthora; moderate resistance to Verticillium.



UC MONARCH – Short Day

- ❖ Comparable yields to Fronteras when planted in short-day environments and cultivated like Fronteras.
- ❖ Can also adapt to day-neutral environments when cultivated like Monterey, performing best with 350-400 hours of field nursery chill.
- ❖ Unique compact and long-truss plant architecture, which enhances harvestability and makes it suitable not only for open field cultivation with reduced planting density but also ideal for tabletop production and machine harvest.
- ❖ Firm, flavorful and excellent shelf-life, superior to Fronteras.
- ❖ Resistant to Fusarium, moderate resistance to Verticillium and Phytophthora.



UC GOLDEN GATE – Day Neutral

- ❖ High yielding day neutral performing best when it has 400-600 hours of in field nursery chill.
- ❖ Slightly earlier than Monterey, displaying superior marketable yields through the season (+27-53%).
- ❖ Compact type plant with long-truss architecture. Good performance in tabletop and open field production.
- ❖ Excellent firmness and shelf-life.
- ❖ Resistant to Fusarium, moderately resistant to Phytophthora and Verticillium.



UC KEYSTONE – Day Neutral

- ❖ High yielding cultivar starting slightly later than Monterey like UCD Royal Royce with superior marketable yields than Monterey through the season (up to 97%).
- ❖ Performs best with 400-600 hours of in field nursery chill and 7-14 days of post-harvest chill.
- ❖ Improved firmness and shelf-life compared to Monterey.
- ❖ Resistant to Fusarium, moderately resistant to Phytophthora and Verticillium.



UC ECLIPSE – Extreme Day Neutral

- ❖ Great establishment and performance in **summer and fall plant production**, with significantly higher marketable yields than Monterey (+47-117%).
- ❖ High yields in summer plant when planted like Portola (+48-66%).
- ❖ Very good fruit size that stays consistent through the season with good shelf life.
- ❖ Resistant to Fusarium, moderately resistant to Phytophthora and Verticillium.



Cultivar	2020 Total Marketable Fruit Yield			2021 Total Marketable Fruit Yield			2022 Total Marketable Fruit Yield			2024 Total Marketable Fruit Yield (Up to End April)			Early Yield Increase Over Fronteras	Percentage Marketable Fruit
	Early Season trays/acre*	End Season g/plant	End Season trays/acre*	Early Season trays/acre*	End Season g/plant	End Season trays/acre*	Early Season trays/acre*	End Season g/plant	End Season trays/acre*	Early Season trays/acre*	Total g/plant	Total trays/acre*		
UC Surflin	1,036	950 b	6,799	3,196	967 a	6,924	2,322	905 a	6,480	1,260	713 ab	4,806	Up to 43%	70-87%
UC Monarch	NA	NA	NA	2,287	878 a	6,287	1,743	576 ab	4,122	928	574 b	3,873	Up to 5%	76-88%
UCD Victor	798	1,116 a	7,986	923	968 a	6,929	1,105	471 b	3,369	763	820 a	5,532		72-92%
Fronteras	1,027	834 c	5,967	2,346	992 a	7,099	2,108	595 ab	4,259	882	548 b	3,697		72-94%

TABLE 1. Cumulative marketable yields for two newly-released **short-day cultivars**: UC Surflin and UC Monarch compared to commercial checks (UCD Victor and Fronteras) tested in Santa Maria district in 2020-2024 from February to May (for 2024 we are only presenting data collected up to the end of April). Early season calculations were made based on the yield obtained until the end of March (columns highlighted in yellow)

Values followed by different letters indicate significant statistical differences ($\alpha=0.05$)

*Calculations made based on a planting density of 26,000 plants/acre in 2020-2022 and 24,500 plants/acre in 2024

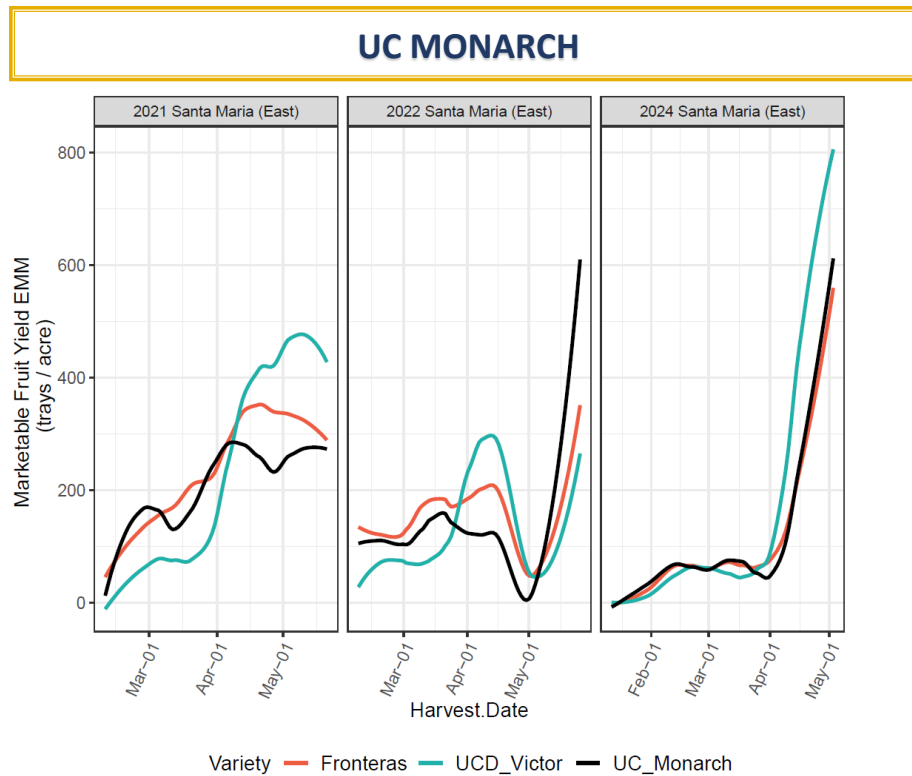
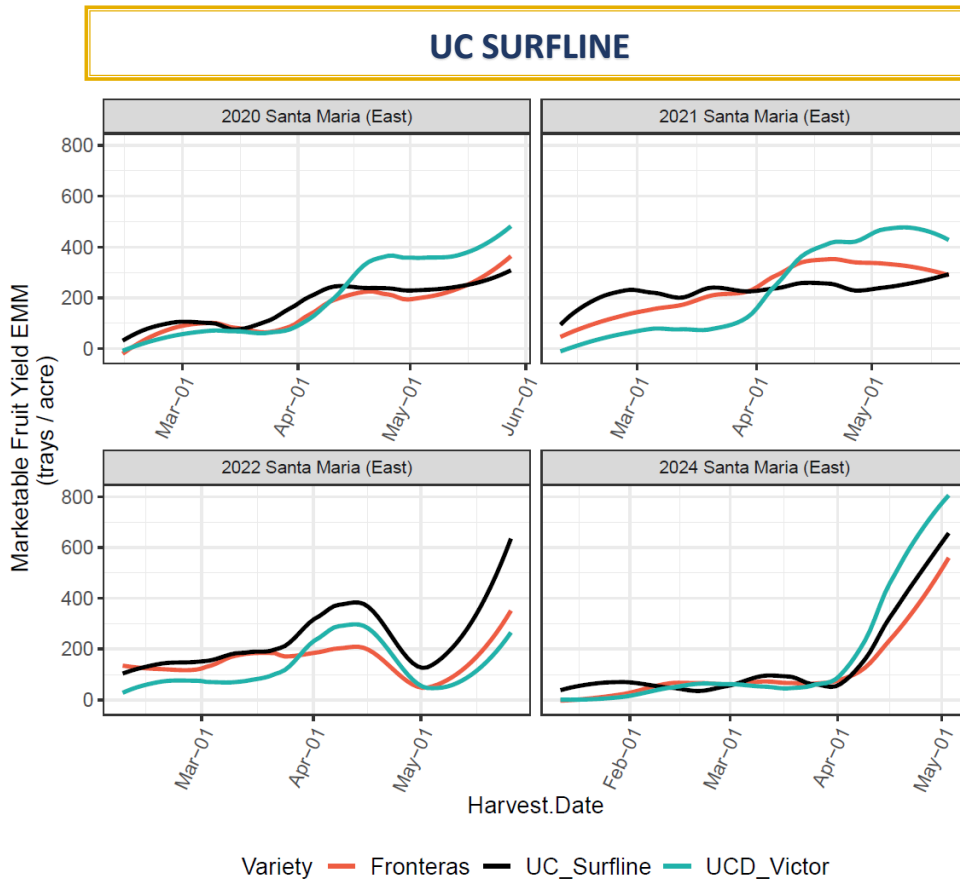


FIGURE 1. Marketable yields in trays/acre of UC Surfline and UC Monarch compared to Fronteras and UCD Victor tested in Santa Maria, CA during the harvesting seasons of 2020-2024.

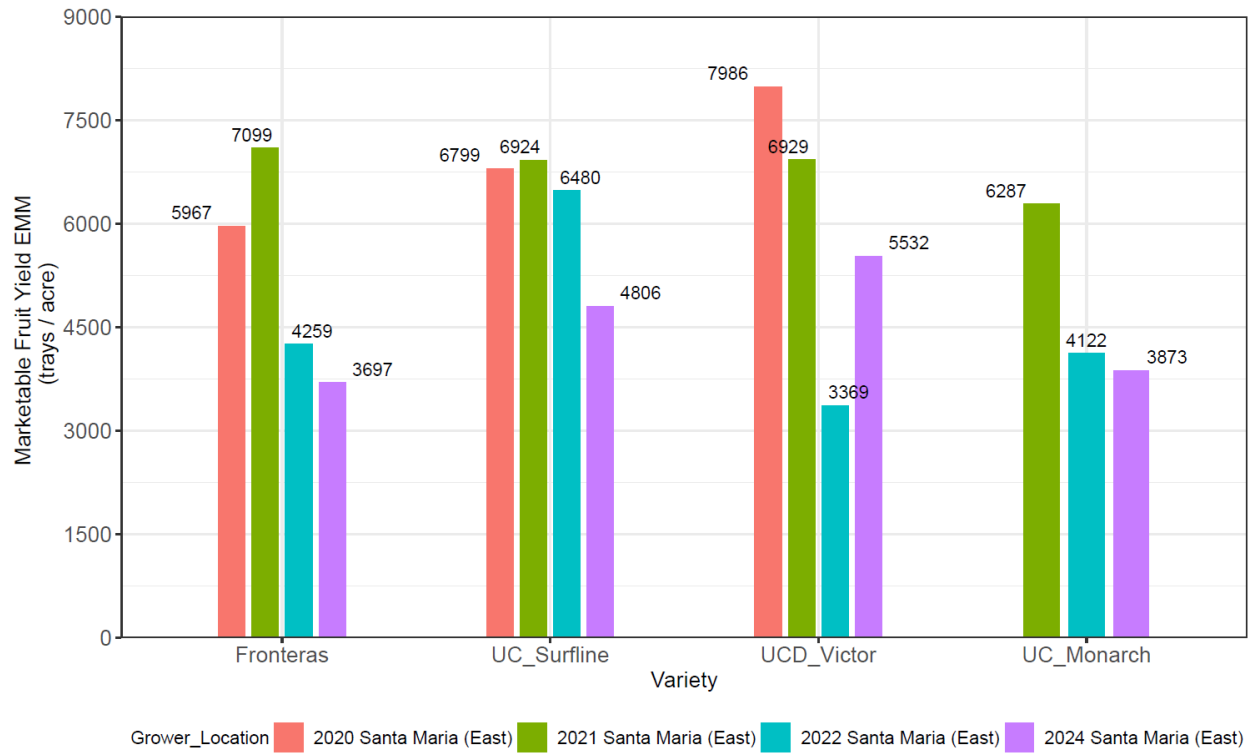


FIGURE 2. End of season cumulative yield (trays/acre) of UC Surflin and UC Monarch compared to Fronteras and UCD Victor tested in Santa Maria, CA during the harvesting seasons of 2020-2024.

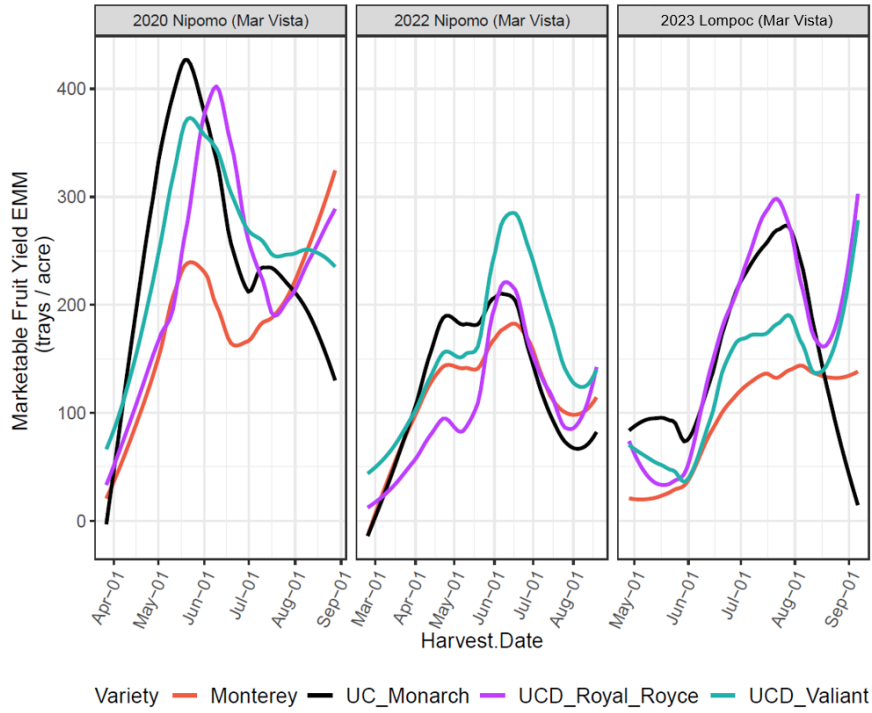
Cultivar	2020 Total Marketable Fruit Yield		2021 Total Marketable Fruit Yield		2022 Total Marketable Fruit Yield		2023 Total Marketable Fruit Yield		Percent Marketable Fruit	Yield Increase Over Monterey
	g/plant	trays/acre*	g/plant	trays/acre*	g/plant	trays/acre*	g/plant	trays/acre*		
UC Monarch	1,922 ab	10,917	NA	NA	989 c	5,621	974 bc	5,536	65-75%	+ 5-63%
UC Golden Gate	1,807 ab	10,265	2,197 ab	12,481	1,313 b	7,461	912 bc	5,182	73-86%	+ 27-53%
UC Keystone	1,935 ab	10,994	2,181 ab	12,391	778 a	4,418	1,178 ab	6,694	62-78%	-18 to +97%
UC Eclipse	NA	NA	2,852 c	16,202	1,385 b	7,868	1,298 b	7,364	70-85%	+ 47-117%
UCD Valiant	1,985 b	11,275	2,358 b	13,398	1,266 b	7,194	804 ac	4,570	71-86%	+ 34-52%
UCD Royal Royce	1,759 a	9,992	2,048 a	11,632	863 ac	4,901	1,039 ab	5,903	64-81%	-9 to +74%
Monterey	1,424 c	8,092	1,554 d	8,827	945 c	5,367	597 c	3,393	61-84%	

TABLE 2. Cumulative marketable yield for three newly released **day-neutral cultivars** (UC Golden Gate, UC Keystone and UC Eclipse) and one short-day (UC Monarch) compared to three commercial checks (UCD Valiant, UCD Royal Royce and Monterey) tested in Santa Maria district (Nipomo and Lompoc) in 2020-2023 from March/April to August.

Values followed by different letters indicate significant statistical differences ($\alpha=0.05$)

*Calculations made based on a planting density of 20,633 plants/acre

UC MONARCH



UC ECLIPSE

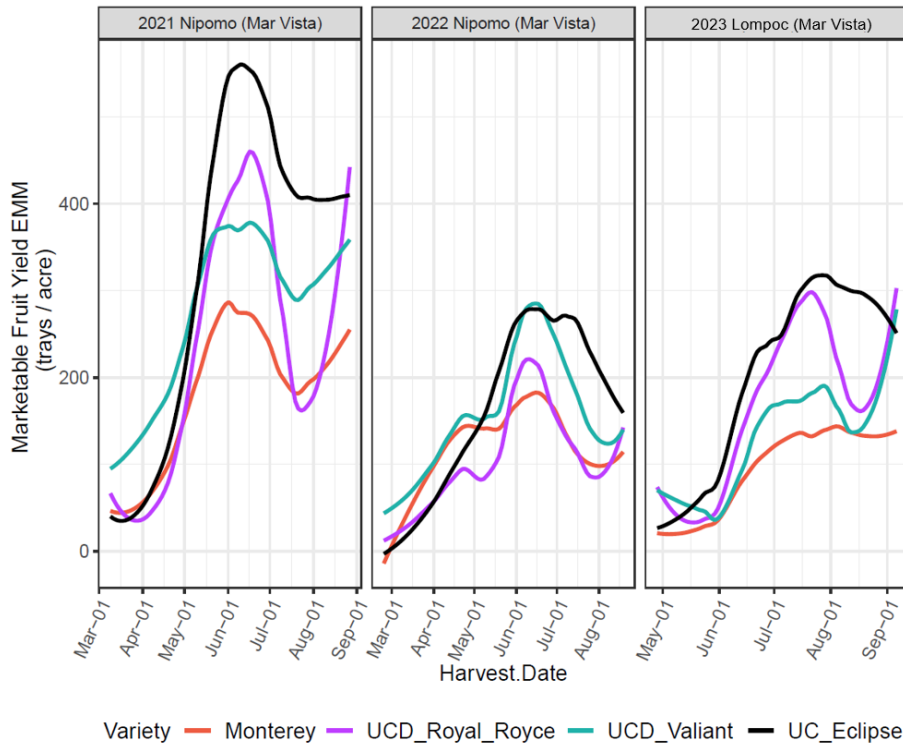
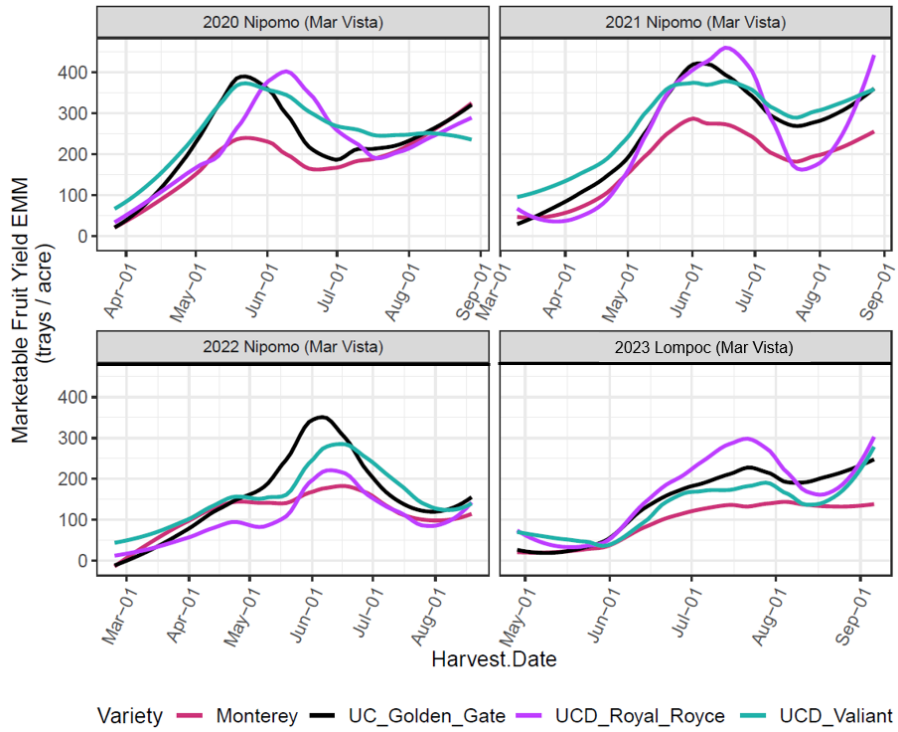


FIGURE 3. Marketable yields in trays/acre of UC Monarch and UC Eclipse compared to Monterey, UCD Valiant and UCD Royal Royce tested in Santa Maria district during the harvesting seasons of 2020-2023.

UC GOLDEN GATE



UC KEYSTONE

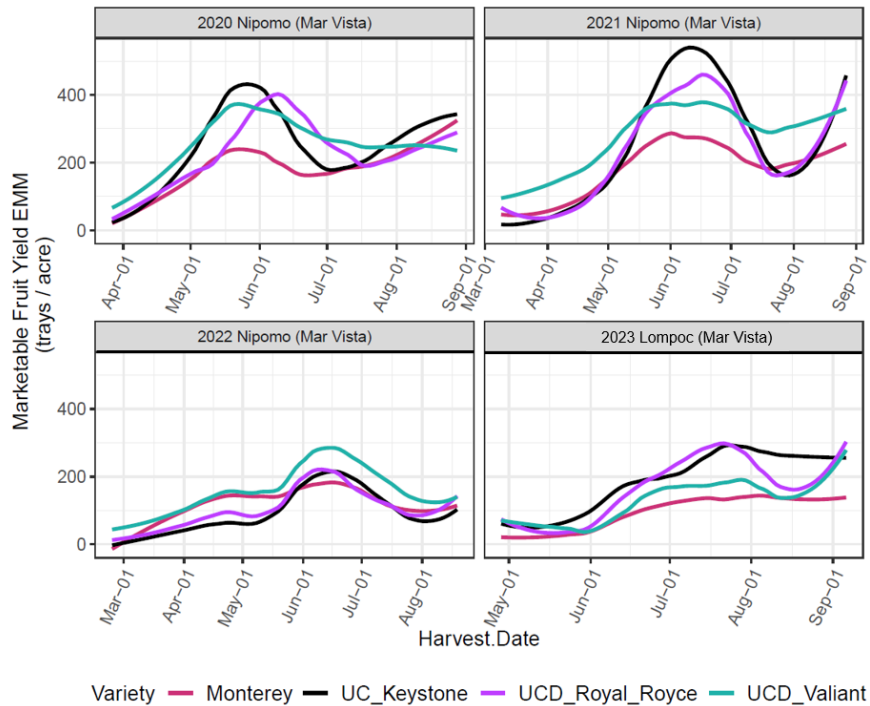


FIGURE 4. Marketable yields in trays/acre of UC Golden Gate and UC Keystone compared to Monterey, UCD Valiant and UCD Royal Royce tested in Santa Maria district during the harvesting seasons of 2020-2023.

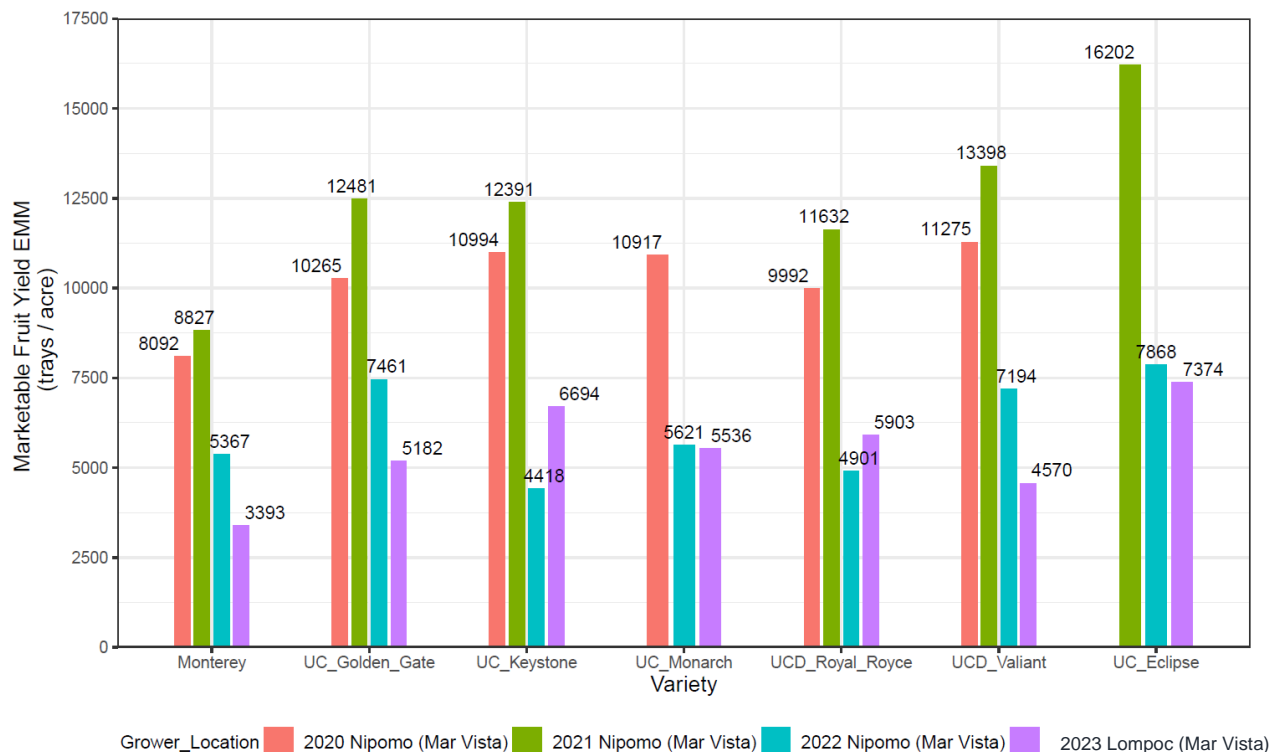


FIGURE 5. End of season cumulative yield (trays/acre) of UC Golden Gate, UC Keystone, UC Monarch and UC Eclipse compared to Monterey, UCD Valiant and UCD Royal Royce tested in Santa Maria district during the harvesting seasons of 2020-2023.

Cultivar	Fusarium Resistance	Verticillium Resistance	Phytopht. Resistance	Macroplasm. Resistance	Firm. (gf)	Brix (%)	Brix/Acid	Fruit Size (g)
UC Keystone (DN)	1	2	2	3	289	8.1	10.5	27
UC Golden Gate (DN)	1	2	2	3	352	8.3	9.2	26
UC Eclipse (EDN)	1	2	2	4	297	7.2	8.5	30
UC Monarch (SD)	1	2	2	3	308	7.9	10.7	24
UC Surflin (SD)	1	2	1	3	339	8.2	9.8	31
Monterey (DN)	4	3	3	4	286	8.7	11.2	26
UCD Royal Royce (DN)	4	3	2	3	333	7.4	8.8	26
UCD Valiant (DN)	4	2	2	3	314	7.4	8.3	29
UCD Victor (SD)	1	3	2	3	297	7.9	10.5	31
Fronteras (SD)	1	3	2	3	226	8.6	10.4	32

For additional information about UC released cultivars visit: <https://www.calstrawberry.com/en-us/>

1	Resistant
2	Moderately Resistant
3	Moderately Susceptible
4	Susceptible

TABLE 3. Disease resistance scores collected from annual disease trials performed at the Cal Poly Strawberry Center and UC Davis. Fruit quality traits were measured in the 2020-2023 seasons in Santa Maria district.