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High summer temperature in the southern San Joaquin Valley accelerates the ripening of some mid-season and late-season table grape varieties

Here is Tian Tian and I am the viticulture farm advisor for Kern County.

We have experienced a warmer than usual summer in the southern San Joaquin Valley in 2021. Set Delano as an example, the monthly average maximum air temperature in June and July was 2 to 3.5 °C higher in 2021 as compared to last four years, while the monthly average minimum air temperature remained similar. As a result, the monthly average temperature in June and July was 0.6 to 2.3°C higher in 2021 than last four years. A brief summary of weather data is attached for reference.

High temperature between fruit set and harvest can accelerate the breakdown of malic acids in the berry, resulting in a high sugar to acid ratio of the fruit and promoting an early harvest. Such effect can be more evident in table grape varieties that are bred and selected for low fruit acidity. As suggested by some growers in Kern counties, they expect many mid-season and late-season varieties being harvested earlier this year.

Please contact me via email at titian@ucanr.edu or by phone at (661) 868-6236 for any questions, comments, and concerns.

Weather data

Table 1. Monthly average maximum temperature in Delano from 2017 to 2021. Data are obtained from California Irrigation Management Information System (CIMIS) weather station in Delano.

	Monthly average maximum air temperature (°C)				
	2017	2018	2019	2020	2021
Mar	20.7	19.1	19.1	19.1	19.9
Apr	23.3	24.2	25.7	23.1	25.9
May	28.1	27.2	25	29.4	29.8
Jun	33.4	32.8	33.1	32.2	35.3
Jul	36.6	36.7	35.1	35.8	38.6
Aug	36.1	35.5	35.7	36.4	N/A
Sep	31.4	32.6	31.8	33.1	N/A
Oct	25.5	26.5	25.9	28.9	N/A
Nov	16.6	20.8	21.4	19.4	N/A

Table 2. Monthly average temperature in Delano, CA from 2017 to 2021. Data are obtained from CIMIS weather station in Delano.

	Monthly average air temperature (°C)				
	2017	2018	2019	2020	2021
Mar	13.7	12.6	12.7	12.5	12.2
Apr	16.1	16.6	18.2	16.5	17.2
May	20.6	19.4	18	21.2	21.7
Jun	25.4	23.9	24.9	24.1	26.3
Jul	28.1	28.2	26.5	26.6	28.7
Aug	27.4	26	26.7	27.3	N/A
Sep	22.6	22.8	22.6	23.9	N/A
Oct	15.4	17.5	15.8	19	N/A
Nov	9.1	11.9	11.9	10.5	N/A

Table 3. Monthly average minimum temperature in Delano, CA from 2017 to 2021. Data are obtained from CIMIS weather station in Delano.

	Monthly average minimum air temperature (°C)				
	2017	2018	2019	2020	2021
Mar	7.2	6.4	6.6	6.7	5.0
Apr	8.8	8.7	10.3	10.5	8.4
May	12.5	11.4	11.8	12.7	11.9
Jun	16.4	14.8	16.7	15.5	16.7
Jul	18.5	19.1	18.0	16.4	18.3
Aug	17.0	17.4	18.7	17.9	N/A
Sep	12.9	14.2	14.8	15.7	N/A
Oct	6.3	10.2	7.5	10.7	N/A
Nov	2.7	4.8	4.4	3.5	N/A