

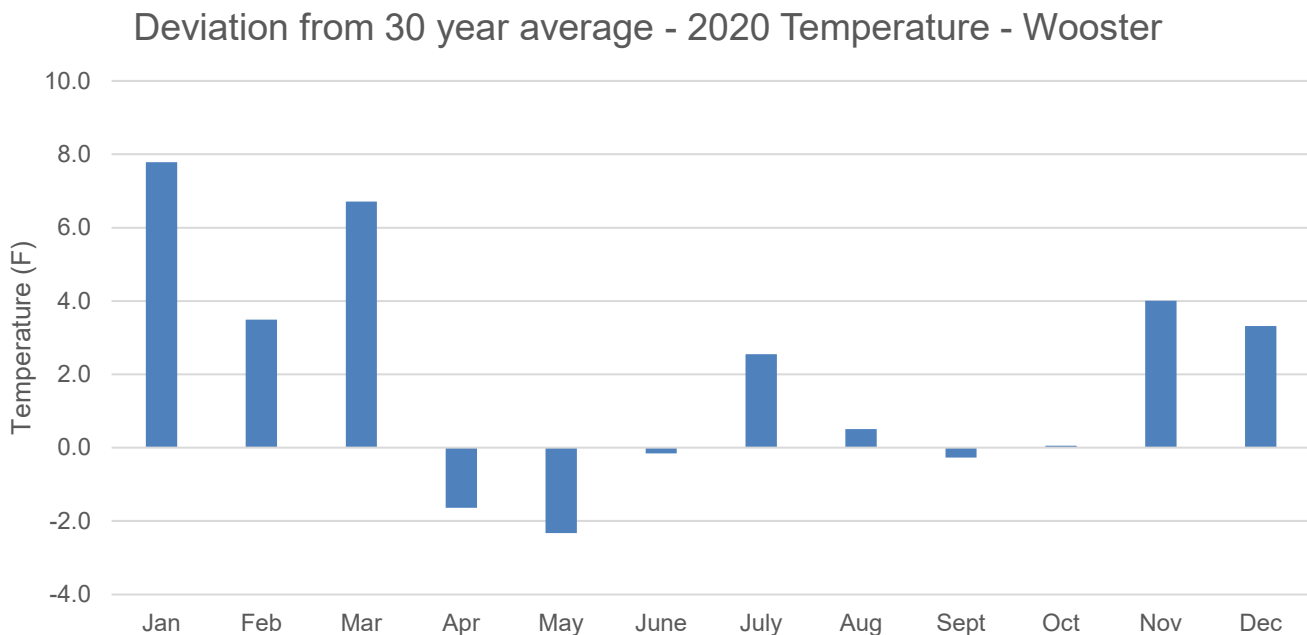
## Impact of Weather on Grapevine Performance During the 2020 Season

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This article summarizes the 2020 dormant and growing seasons and the impact of weather on grape varieties grown on the research vineyard at the OSU-OARDC in Wooster, Ohio.

### Weather: Temperature

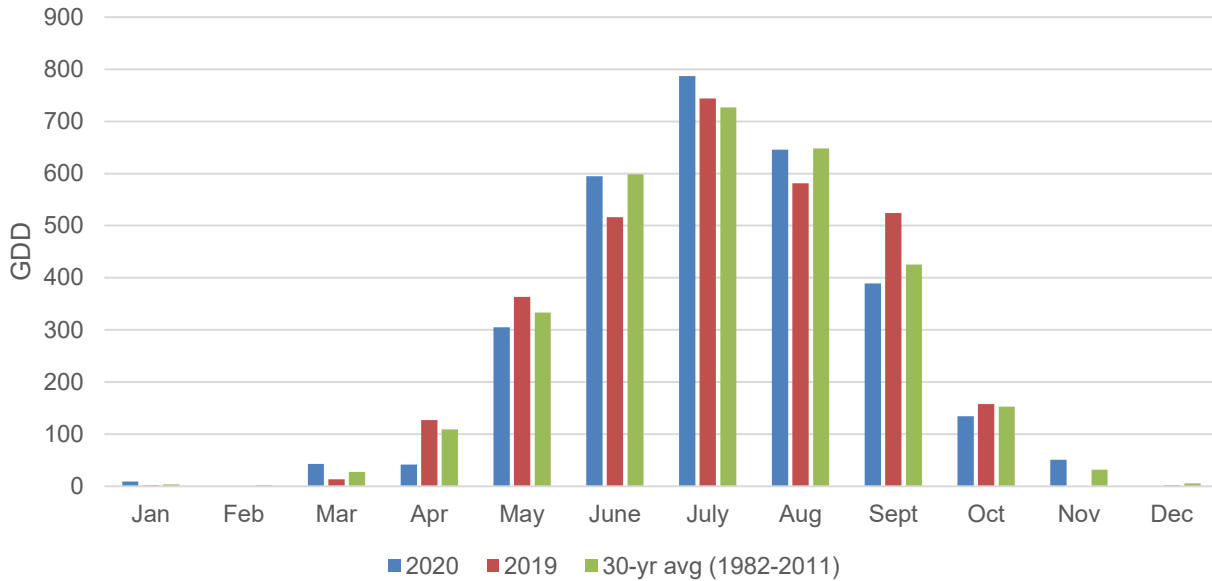
2020 was a very different year from the very beginning. The first quarter of the year was unusually warm with mean January temperatures in the 30's. At our research vineyard, the lowest recorded winter temperature was 3.7 °F, which occurred on February 15<sup>th</sup>. Temperature trend was reversed during the second quarter with both April and most of May having cooler temperatures than normal. A statewide frost event occurred the week of April 12<sup>th</sup> and temperature dropped to 24.6 °F in Wooster on April 16<sup>th</sup>. We were fortunate to receive little injury as we had no budbreak at this time, but another drop in temperature to 29 °F on May 9<sup>th</sup> caused small amounts of injury to some primaries. June temperatures leveled out, but July temperatures were above normal and were over 90 °F for 8 days. During the ripening period of August through October, temperatures were very moderate and on track with the long-term average. The killing frost occurred on November 13<sup>th</sup>. Both months of November and December followed the 2019 trend of being warmer than normal by 3-4 °F.



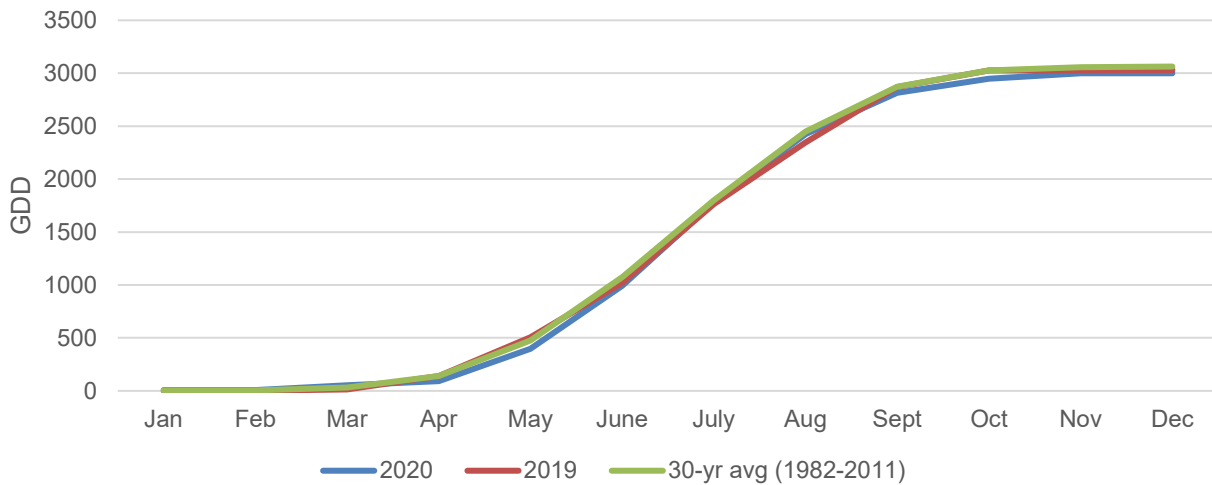
## Weather: GDD

A warm beginning of the year gave us a head start with higher-than-normal GDD but that quickly disappeared during a cool April and early May. We did gain ground on GDDs in June through August even though GDDs remained below the long-term average from April through October except for July. At 3000 in 2020, GDDs were similar to those in 2019 (3030) and well below those in 2018 (3345) but ended the year very close to the 30-year cumulative average of 3063.

### Monthly GDD - Wooster



### Cumulative GDD - Wooster

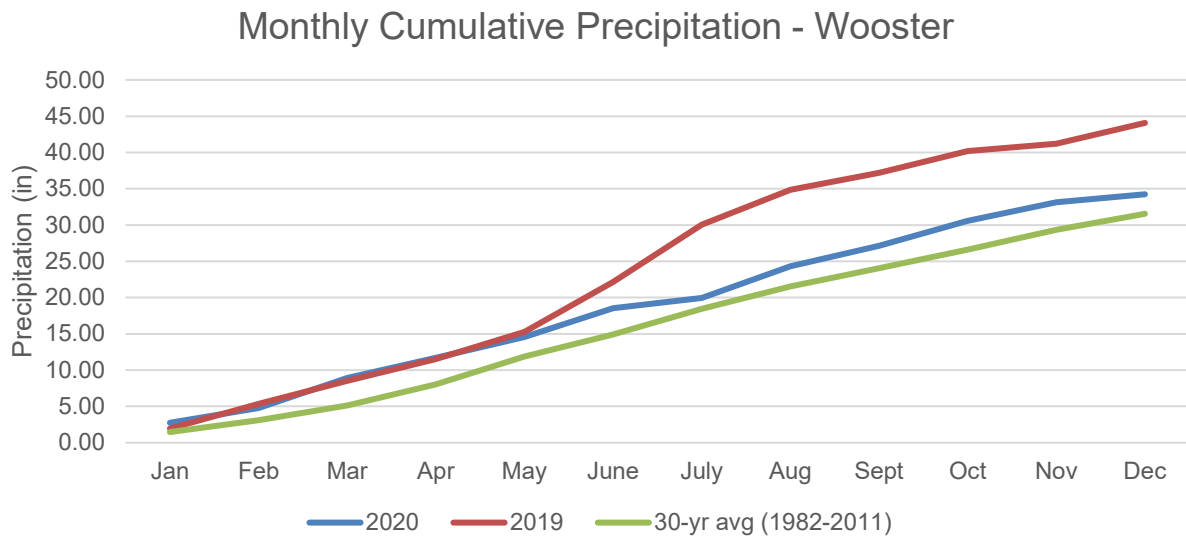
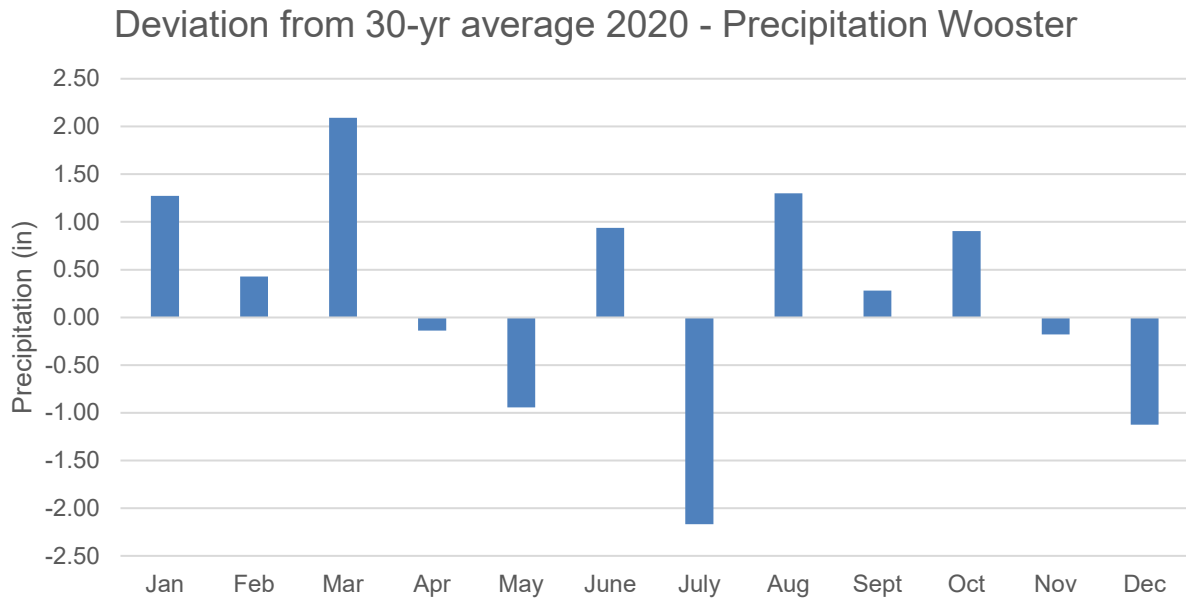


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## Weather: Precipitation

The 2020 precipitation changed drastically over the previous 2 seasons. The 2020 cumulative precipitation was only 34.24" (2.66" over the long term) vs. the very wet 2018 (44.5") and 2019 (44.1"). Although we started off gaining over 8.9" by the end of March, July was very dry (more than 2" below the average). Precipitation during ripening was a bit over normal but not excessive. The season ended with below-normal precipitation.



## Vineyard Notes:

2020 Spring freeze injury: We were fortunate to escape the winter months with no winter injury and thanks to a cool April which slowed down bud break, the April 16<sup>th</sup> freeze did not affect us in Wooster since grapevines had not broken buds at that time. After the May 9<sup>th</sup> temperature drop, we did observe a small amount of freeze damage but not much due to the late bud break. COVID-19 restrictions along with the cool weather actually may have helped us due to later than normal pruning practices.

Diseases and insects: For the most part, fruit remained clean throughout the growing and ripening season. There was some concern for berry shrivel during the drought months of July and early August but that was quickly remedied with ample rain following hurricane Laura. Timing harvest with small amounts of rain occurring resulted in sour rot in some susceptible varieties. We also observed a significant bee and bird pressure in early September. As always, the Japanese beetles made their presence known but only small amounts of defoliation occurred thanks to timely sprays in the vineyard.

Fruit quality: Our harvest season came fast and furious between the dates of September 1<sup>st</sup> and October 7<sup>th</sup>. Our yields were lower than we would have liked. As shown in the table and figures below, sugars were lower and acids higher than in previous years. This is likely related to the mean temperatures and GDDs being lower than those in 2018 and 2019 during ripening.

### 2020 Harvest fruit composition of selected grape varieties at the *Wooster* research vineyard:

Variety	Harvest Date	100 Berry wt (g)	SS (%)	pH	T.A. (g/L)	FMI
Aromella	15-Sep	212	18.7	3.03	9.8	19
Brianna	1-Sep	249	23.1	3.69	4.3	54
Cabernet franc	29-Sep	177	20.1	3.22	10.3	20
Chambourcin	7-Oct	216	21.7	3.14	11.4	19
Chardonnay	23-Sep	175	20.0	3.06	9.9	21
Frontenac	5-Oct	133	25.6	3.28	12.8	20
Itasca	1-Sep	145	23.9	3.48	9.06	26
La Crescent	22-Sep	140	23.5	3.1	13.3	18
Marquette	11-Sep	148	24.5	3.1	12.8	19
Regent	17-Sep	201	17.0	3.31	7.1	24
Sauvignon blanc 27	15-Sep	170	20.1	3.16	7.5	27

\*FMI: Fruit Maturity Index = SS/TA\*10.

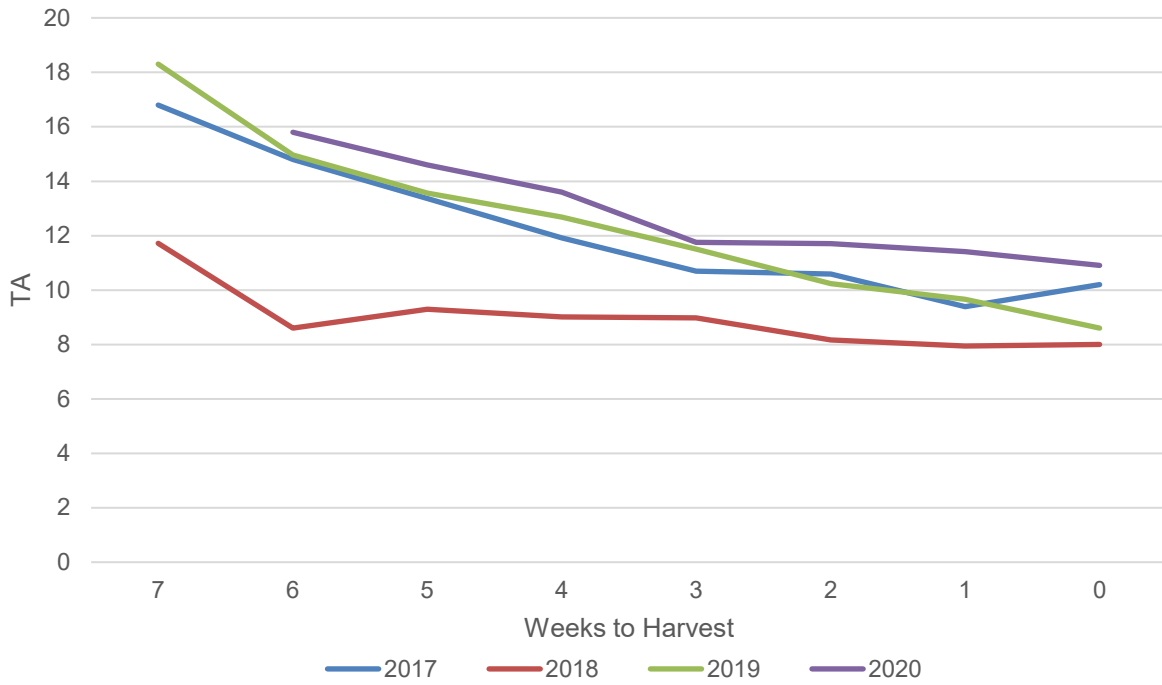


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Titratable Acidity (TA) During Ripening in Chambourcin



Brix During Ripening in Chambourcin

