

The 2023 harvest "A climatic rollercoaster that ended up producing concentrated, refreshing wines"

The recent harvest will go down as one of the most turbulent in recent memory. The 2023 season was a year of sharp ups and downs: the weather ensured the lowest yields since 1960, inevitably meaning that some producers lost out, although others were able to ride out the storm and end up ahead. The contrasts throughout were stark. Now that the wines are resting at the wineries, one thing is becoming clear: when they look back on 2023, people will say many things, but one point will be made above all others; it was a year when judging the right time to harvest was extremely difficult.

Alejandro Vigil, President of Wines of Argentina and Director of Oenology at Catena Zapata, sums things up: "The season was very varied with higher temperatures than last year but also lower yields due to the frosts." However, he takes a long-term view, "The Argentine wine industry has shown that it can overcome difficulties. Economic crises, the logistical nightmare that came with COVID, climatic extremes such as those we saw this year: they've all forced us to improve. None of them has kept us out of the wine stores. On the contrary, we're still exporting to the world and getting more and more consumers interested in Argentine wine, year after year." The 2023 vintage will be no exception.

A rollercoaster known as La Niña

Three years of the phenomenon known as La Niña came to an end this harvest. And a good part of the eccentric weather seen during the season can be explained by the global temperature fluctuations associated with the phenomenon. In South America especially, La Niña turned expectations on their head.

Some facts to put things in perspective: the Pampa Húmeda of Argentina, which usually receives 1000 millimeters of rainfall a year, experienced an extreme drought, indicating just how far weather patterns in the region were off kilter. These extremely dry conditions applied throughout the country and to a great degree explain what occurred in the vineyards in 2023.

"The end of the 2022 harvest was dry and cool. It ended on April 8 following some very early frosts on March 30 (-3,5°C) and April 5 (-4°C), caused by convective cooling after the Zonda winds. Such cooling is commonly seen in the region, but never at that time of year," says Andrea Ferreyra at Finca La Celia. This left the plants less resilient coming into a winter that would continue to be cool and dry. Snowfall was fairly abundant in the Andes from Mendoza to Catamarca, albeit lower than average for the seventh consecutive year. The spring came early with high peaks of temperature and so budding was also brought forward. Given the dry conditions, producers worried about the potential effects of frosts. Their fears were confirmed on October 31 and November 1 last year, when a dry polar front swept quickly up the country as far as the Tropic of Capricorn. Thermometers plunged to -7°C for several hours in some areas of northern Patagonia and the south and east of Mendoza.

The frost struck the vast majority of vineyards in Argentina, with a few exceptions. Budding in warmer areas had got as far as 15 cm, which were lost

overnight in the worst hit areas. In the mountain vineyards, the effects were more unpredictable: not just because budding was far less advanced but also because the polar air front only hit lower areas. From 3900 feet upward, where the slopes were steep, the vineyards escaped entirely.

This episode was responsible for the main variable of 2023: a generalized drop in yields that the National Viticultural Institute estimates as being 25% across the country with some areas seeing as much as all of their output destroyed. This means that the 2023 vintage will report the lowest yields by volume since 1960 at just 1.437 billion kilos.

The frost accounted for a large part of the drop in yields, but not all of it. Secondary budding tends to be less fertile and given the drought the grapes suffered from greater filage. This was especially true of Malbec vines, but also applied to other varieties.

The dryness was also the cause of two of the other significant factors that affected the season: the lack of rainfall during the warm November and December led to smaller grapes. Comparatively, according to data supplied by Facundo Buenamaizon at Bodega Chakana, grapes shrunk by as much as 25% in 2023. Victoria Brond, the Oenologist at Alpamanta Estate, saw similar results: "For us, it's clear that the yields dropped to the frosts and the fact that the bunches and grapes themselves were smaller due to the lack of water."

Meanwhile, the lack of rainfall created heat waves across the region. 2023 was the hottest since 1961 according to data from the National Meteorological Service. Between November and February, between 7 and 9 heat waves were recorded, depending on the area. Martín Kaiser, the Production Manager at Doña Paula, made a striking calculation: "The average maximum temperature for January in Ugarteche, Mendoza, is 30.5°C. This year, that mark was reached 125 days in a row. The summer was a never-ending January." The accumulated degree days back this up: they were 12 to 13% higher than in 2022.

The heat hit harder in milder areas such as Luján de Cuyo, taking them into a higher category on the Winkler Scale. In the Uco Valley, according to data from Zuccardi Valle de Uco, the temperatures in Gualtallary, Altamira and San Pablo were the highest since 2015.

And so, this year saw a perfect storm: whereas the frost naturally reduced yields, producing a ratio of more foliage to fruit, the resulting increase in photosynthesis sped up the development of the grapes while the hot summer accelerated ripening even more. Overall, ripening was brought forward by between three and four weeks in warmer areas and one or two in cooler ones. However, the rollercoaster that was 2023 had further surprises in store: brix and acidity were high for February but the tannins and color were still delayed. This made judging the right harvest point very difficult.

As though the year needed another unusual event, on February 18, another frost struck some parts of Patagonia and the south of Mendoza, affecting some areas of the Uco Valley. This low, which represented the beginning of a cooler period that lasted until mid-March, opened up a window that helped to balance out ripening in the majority of areas. Whereas February, generally a rainy month in Mendoza, was warm and dry, March saw far greater than average rainfall: between March 12 and 15, as much as 70mm

fell in some areas, including La Consulta according to reports from Finca La Celia, which "put a dampener on ripening", to use the producers' phrase. This allowed harvesting of the Bordeaux varieties to be delayed until April.

In general terms, the climatic turbulence established three very unusual harvest windows. Some chose a February window, concerned that alcohol levels would rise too far before phenolic maturity was achieved, others harvested following the lower temperatures from February to mid-March, at a close to ideal point of ripeness for several varieties, and others harvested following the rains and cool weather of March. In short, it was a difficult year that required vineyard teams to stay alert day after day, patrolling the vines to determine just the right harvest point.

Now that the wines are aging in the wineries, optimism is building for some styles especially, given the heightened expression of the reds. 2023 looks to be offering concentration, intensity and freshness, an unusual combination for Argentina, but an alluringly attractive one.

MENDOZA AND SAN JUAN

The year in Cuyo, where 90% of Argentina's wines are made, was as unpredictable as elsewhere in the region. The frost had a major effect on yields in the majority of sectors and also on the eventual quality of the grapes. Dividing the region into its oases, we can differentiate the situation on the plains from that on the mountains.

San Rafael and the plains

General Alvear, San Rafael and the east of Mendoza have a surface area under vine of 91 thousand hectares and constitute the productive core of Mendoza. The frosts struck the entirety of the area with losses of up to 50%, which were exacerbated by the traditional December hailstorms. The lack of water during the spring made the late frosts worse, with the dry soils hurting the setting and size of the grapes.

"The white wines are excellent quality with good aromatic intensity, like the rosés. Among the reds, there was a tendency to harvest earlier than in previous years. While the IPT content might be lower in general, the intensity of the colors, aromas, textures and varietal identification are excellent," says Jimena López, the Head of Oenology at Bodega Funckenhausen.

The low yields also raised the price of grapes for the 2023 season.

Luján de Cuyo

As an area of transition from the plains to the mountains, a warm year like 2023 often pushes Luán de Cuyo into extreme territory. Within the region, which accounts for around 15 thousand hectares under vine, the situation very much depended on the type of soil in question while the frosts and hail had the usual effect, with losses varying by area.

In Ugarteche, for example, yields were low, similar to 2016, reports Victoria Brond at Alpamanta. "I'm surprised by the figures from the analysis of the wines,

which are different from anything we've seen over the past 23 vintages," she says. Similarly, Gustavo Rearte, who oversees winemaking at Achával Ferrer, reports that, "The wines have finished fermenting at low pHs, resulting in good potential for the aging process and life expectancy in the bottle, which we're anxious to confirm."

Among the gravel-rich soils of Las Compuertas and Vistalba, if the irrigation was set right, they managed to, "achieve a harvest point with optimal alcohol and also good tannic concentration and color, which was the biggest challenge for a harvest that was brought forward 10 days in Luján de Cuyo. In my opinion, it will be a good quality vintage with fresh reds that will age well in the bottle," predicts Magdalena Viani at Trivento.

In Agrelo, meanwhile, where the soils are rich in clay, the heat waves were weathered well, again so long as irrigation was adjusted to match the peaks in temperature. Cecilia Acosta at Bodega Argento, says: "The Agrelo vineyard was incredibly healthy and achieved good balance with vivid concentration and color and fresh, fruity or ripe profiles, depending on the harvest point." The lowest areas of the GI, where cold air gathers, lost almost all their grapes during the October frosts.

"The 2023 harvest was very interesting, quite different to most, although in recent years we've seen an increasing number of late frosts. However, the late frost of spring 2022 was extremely severe in the Uco Valley and across the country, although it was less intense in Luján than elsewhere, especially Uco and the east of the province. Luján de Cuyo experienced a drop in output but not many vineyards were actually scorched by the frost. Then the summer was quite hot for a few weeks, mainly January and a few days in February but the nights remained cold so the general quality was very good. I was surprised to see the good quality of the whites and especially the reds, which have plenty of color, tannins, concentration and fruitiness," says Roberto de la Mota, President of the Luján de Cuyo DOC.

The Uco Valley and the mountain vineyards

In this region, which has about 29 thousand hectares under vine, two significant factors need to be taken into account to understand the effect of the frost: the altitude and topography of the different regions. While in Gualtallary and Los Chacayes, where the slopes are steep, drainage good and altitude high, the cold front had no dramatic effects, in lower areas such as Paraje Altamira, El Cepillo and La Consulta, it struck hard. In the latter regions, the frosts even ravaged vineyards prepared to withstand them. Diego Morales at Salentein sums up the mixed reports from the Uco Valley: "Depending on the area, the frost damaged some varieties more than others."

This was the situation for the technical teams in the vineyards this year: the Uco Valley experienced the conditions in markedly varied ways, especially when the later heat is taken into account. In areas of transition, at around 3200 feet, the effect was notable but far less extreme higher up, with exceptions.

"Gualtallary was very early this year," says Sebastián Zuccardi. And most of the producers consulted agree. This was particularly true in areas with stony or sandy soil. "At first we were worried because the grapes were ripening fast," says Noelia Juri at Zorzal Wines, "and we harvested the Malbec before March 15. Not the Cabernet though." Diego Morales adds, "the whites are very balanced, with very good acidity, tartness and juice thanks to the thermal range. The reds were helped by the thinning of the grapes by the weather, ensuring that the tannins are ripe and concentrated, making for concentrated wines, with pHs that augur excellent bottle life." Andrea Ferreyra at Finca La Celia says, "We think that the Malbec will be the star of the year by far, but there's also the Cabernet Sauvignon which, because of our early read of the weather and the development of the vineyard, we harvested in a window when it was fresh but ripe. We think it will surprise with its texture and herbal aromatic profile."

The technical report issued by the team at Catena Zapata reads, "the varietal character was more vivid this year, perhaps due to the lower alcohol level and variable yields. The minerality is quite pronounced, even in lower altitude areas, where higher levels of natural malic acidity were obtained. The key this year was getting the harvest time right for each terroir, parcel and variety."

San Juan: Ullúm, Pedernal and Calingasta

On the plains of San Juan, the October frosts, which struck when the buds had grown significantly, together with the lack of water during the summer, were the leading causal factors in the drop in yields in what is normally a warm area. In general, yields were 15% lower than normal.

Germán Buk, who oversees operations at Finca Las Moras in San Juan, describes: "a warm year with more degree days than the 2022 harvest and similar amounts of rainfall, meaning not much at all. The health was good (...) We started to harvest on average 10 days earlier than normal due to accelerated maturity of the sugars, with satisfactory levels of acidity and pH in the most productive valleys such as Tulum."

Meanwhile, in Pedernal, a high-altitude valley in the Andean foothills, which had 900 hectares under vine, the harvest was excellent. The frosts didn't have so much of an effect because of the height of the valley, so most of the grapes were saved. Paula González, the head of Pyros Wines, who are based in Pedernal, says: "There's excellent freshness, good acidity and plenty of fruitiness. The alcohol is a little lower than in other years but the texture and character have been retained."

In Calingasta, the frost struck hard even though the vines tend to bud later. Andrés Biscaisaque at Los Dragones, reports: "It was a difficult year but I think it was a very good one in terms of grape quality. The vines hit by frosts ripened unevenly and, along with the heat waves, this made it challenging to judge the harvest time. I saw plenty of filage, but in spite of all that, the yields weren't much below normal."

PATAGONIA

Beginning at the Colorado River and stretching southwards, Patagonia is a vast expanse that accounts for half of Argentina. Gathered around different river-based oases, the 360 hectares of vineyards experienced very different weather depending on their exact location. To the north, for instance, where 90% of those vineyards are located, the polar front at the end of October arrived once budding had begun. They had a significant impact with losses

rising as high as 50 to 70%. Eugenia Herrera at Casa Pirque, who make their wines in Valle Azul, reports, "because of the warm spring, the vines budded quite early, and some bunches were forming when the frost of October 31 hit, which is why the damage was severe even in vineyards that had defenses like spraying or convection systems. Then the season continued to be warm and dry with less of a thermal range than usual and high temperatures for the region."

In Alto Valle, Río Negro, Juan Vidiri at Bodega Canale, says, "we had no rain in February, March or early April in Alto Valle so the harvest went smoothly without delays, starting in February and ending on April 3."

Meanwhile, Marcelo Miras at Familia Miras says, "the white wines present excellent acidity, aromas and varietal character. The red wines are very aromatic, with intense color, concentration and refreshing acidity."

In San Patricio del Chañar, Neuquén, the conditions reported were similar. "We had a cool spring with several nights of below zero temperatures when we had to take defensive measures – spraying and heating. Ripening occurred unevenly in some varieties due to the frost but the vines were as healthy as they usually are in the area and the harvest was brought forward a few days earlier than in previous years. We had to work hard on bunch selection for the varieties that had ripened unevenly but the overall quality of the grapes was excellent," says Ana Viola at Malma Wines.

Leonardo Puppato at Familia Schroeder sums up their year thus: "Good concentration and intensity of color and aromas for the Malbec."

On the steppes of Chubut, in contrast to what one might expect, the cold front didn't have an impact even though 6 frosts were recorded throughout the year. In this part of the deep south of Patagonia, snowfall brought water to an otherwise dry year and helped to combat the frosts. Sofía Elena, the Oenologist at ContraCorriente in Trevelin says, "We've just finished the harvest and this year we have more grapes than in previous years, all in very good health." Similarly, Juan Pablo Murgia, Technical Manager at Avinea, who is responsible for the vines at Bodega Otronia, says: "The 2023 vintage was one of the best of recent years due to the low temperatures in early spring, good ripening of the varieties and the date of the harvest."

CALCHAQUÍ VALLEYS AND THE QUEBRADA DE HUMAHUACA

In the north of the country, which has around 6500 hectares under vine, conditions were quite different. The friost reached the Calchaquí Valley in some areas but wasn't so harsh due to the relative isolation and changing altitudes of the valley, while it struck the Quebrada de Humahuaca hard.

The summer, however, was mild; measured in degree days it was slightly cooler than the previous year. At Bodega Colomé, Thibaut Delmotte reports: "The harvest was delayed by about 15 days. January and February were quite cool, maintaining the freshness of the fruit. In March, we had some hot days, which accelerated ripening, and some rain. Because of the delay from the cool year, it was a little harder to get the late developing varieties ripe."

Diana Bellincioni at Estancia Los Cardones says that "the Tolombón vineyard was spared the frost but the harvest was still later than usual.

Things were a little uneven initially, but settled down around March. This year, I'm thrilled with the Cabernet Franc and Syrah."

OTHER AREAS OF ARGENTINA

In Córdoba the frost caused major damage. Its extent varied, however: "between 40 and 60% in the Sierra vineyards and up to 15% in the foothills," says Daniela Mansilla, the Agricultural Engineer in charge of several different vineyards across the province. "Of the four regions in the province, the greatest damage was seen in Calamuchita but it wasn't so bad to the north or in Traslasierra. The heat of summer and the lack of rainfall at least ensured the health of the grapes, so what was harvested was good quality." The reds, she says, present vivid colors and aromas, similarly to the rest of the country.

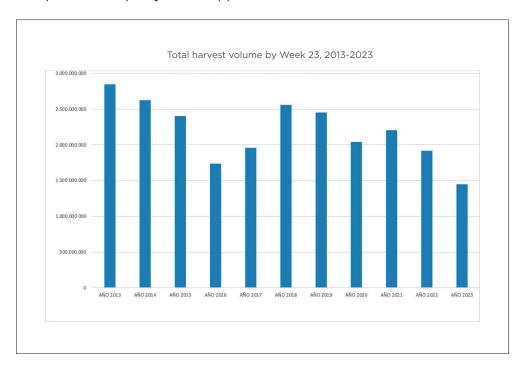
In Entre Ríos, where a small wine hub is developing, La Niña was bad news for farmers everywhere and vineyard owners were no exception. Noelia Zapata de Jacob, the President of the Asociación de Viticultores de Entre Ríos, explains, "The major factor for this harvest was the drought. It was brought forward twenty days and there was a drop in yields of about 55% as we thinned out the fruit for better irrigation during the drought. The high temperatures also reduced the size of the fruit quite significantly."

The drought also cast its shadow throughout the season in the Province of Buenos Aires. Delfina Pontaroli at Puerta del Abra in Balcarce says: "We protected ourselves against the November frost and in general from spring to the second half of January and into February we saw high temperatures. That brought the harvest forward. It was a year of exceptional yields and very good quality, healthy grapes." The March rains arrived when the harvest was already under way.

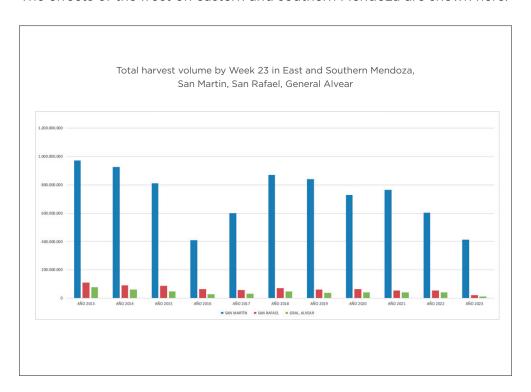
ANNEX

Overall view of the harvest

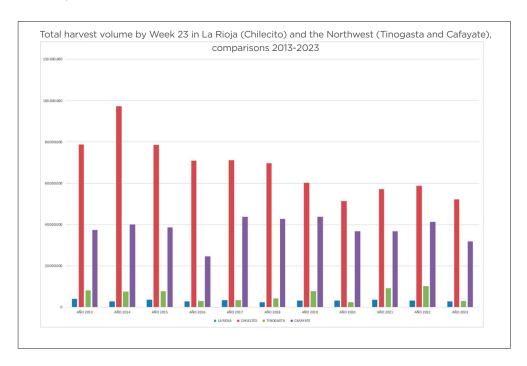
Historic total harvest volume for Argentina 2013-2023 (kg). The comparative drop in yields is appreciable.



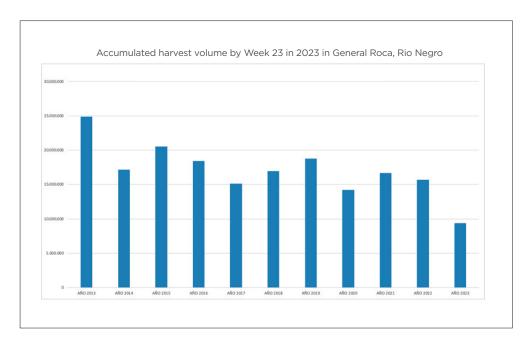
The effects of the frost on eastern and southern Mendoza are shown here.



In La Rioja and the Northwest, the frost had less of an impact, especially in Cafayate.

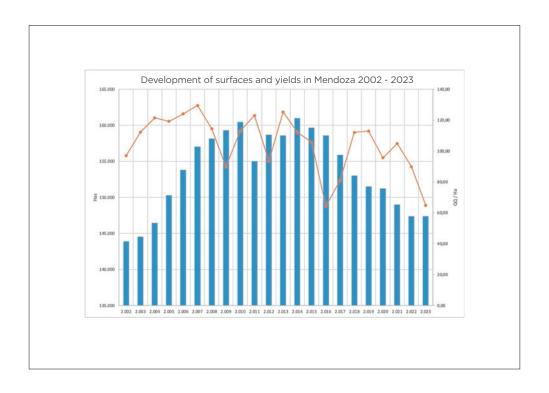


In Patagonia, data from the NVI delegation in General Roca, Río Negro, shows the drop in yields very clearly. These were the lowest yields since 2013.



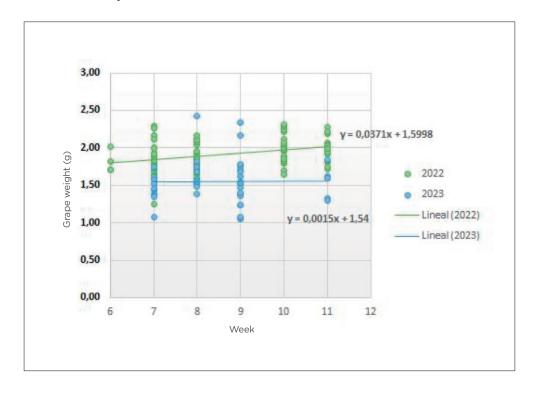
Yields by hectare

This comparative analysis provided by Bodega Alpamanta shows how yields per hectare are the lowest in the 2013-2023 decade, with the only lower year being 2002, when yields per hectare also fell. The line is the surface area of hectares harvested in Mendoza, the bars yield per hectare.



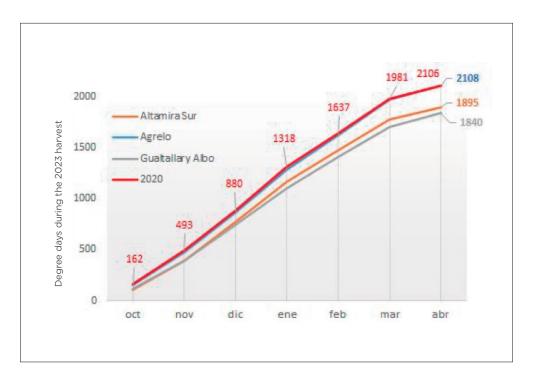
Weight of the grapes

In this comparative graph for the years 2022 and 2023 for vineyards in Paraje Altamira, Gualtallary and Agrelo, prepared with information from Facundo Bonamaizon, we see how over the weeks (until Week 12) of the harvest, the size of the grapes didn't change this year. This phenomenon, says the expert, is another reason for the drop in yields this year. The explanation is the lack of water, he says.

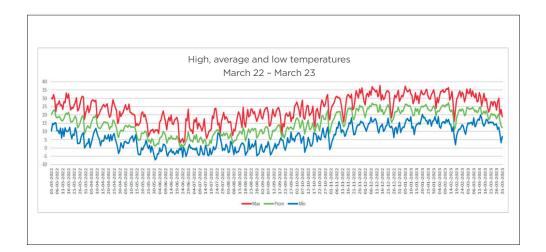


Degree days & weather

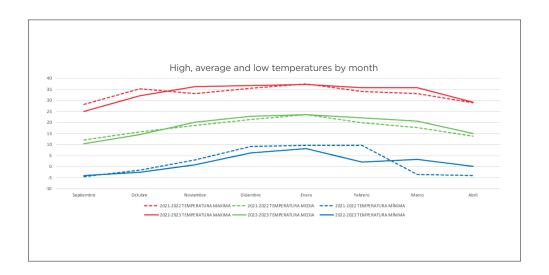
In this comparative graph, we see how 2023 overlaps 2020 in Agrelo. The data is for vineyards belonging to Chakana.



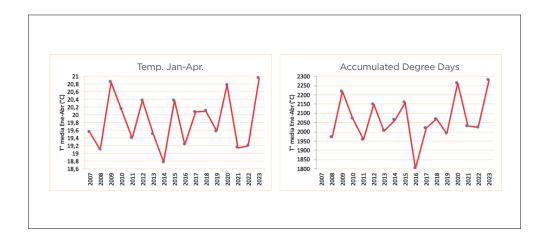
In this graph, prepared using data from a meteorological station in La Consulta, Uco Valley, we see how the summer endured as many as 9 heat waves. Info: Finca La Celia.



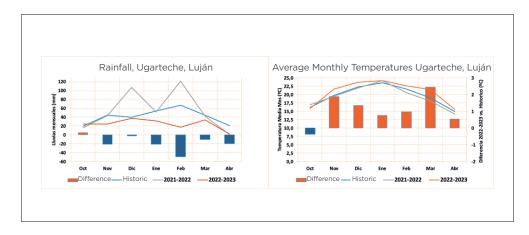
The following graph shows average temperatures during the 2022-2023 growth cycle. Again, the data are from Finca La Celia for the La Consulta vineyard. The most important aspect is that between December and February, the average highs barely changed, where a peak is clearly seen in the 2021-2022 season. The lows did vary, however. This thermal range, along with the relatively low cloud cover, explains much of the color achieved this year.



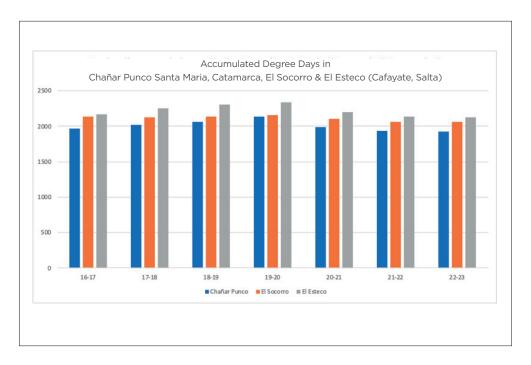
The numbers for the Doña Paula vineyard in Ugarteche, south of Luján de Cuyo, are eloquent. The average temperature between January and April was the highest since 2007, while degree days just exceed those seen in 2020.



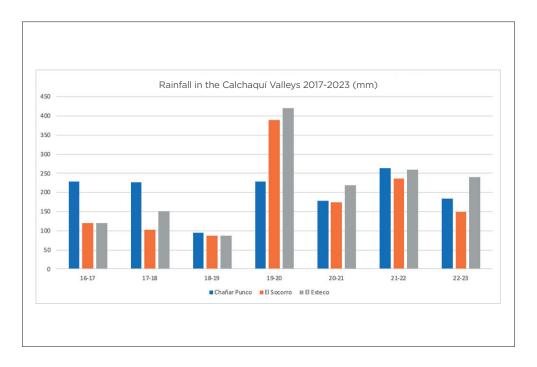
Similarly, comparing the differences with the previous season to the historic record, at Doña Paula's Ugarteche vineyard, the curves clearly demonstrate the unusual conditions seen throughout the area.



In this graph for the Calchaqui Valley region, we see how accumulated degree days throughout the 2022-2023 season are very similar to 2021-2022. The information is for the El Esteco vineyards.



In addition, the rainfall in the Calchaquí Valley in the 2022-2023 season was within expected parameters for the area.





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