# The 2010 Vintage in Bordeaux: another very great year for both red and white wines

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After the much-awaited and much-vaunted 2009 vintage, which has fully lived up to expectations, was Mother Nature really capable of bestowing another great vintage on Bordeaux the following year? Considering the weather patterns over the summer and analysis of the grapes during the 2010 harvest, the cautious answer was "Yes, maybe". However, once fermentation finished, the answer became "Yes, probably". By late March, the strategy for the final blend has been decided, so we can answer that 2010 will most certainly be a great and even a very great year for both red and white wines.

As an introduction to this vintage appraisal, it is always useful to refer to the five conditions that "make" a perfect vintage for red Bordeaux.

- 1) (2) Early, rapid flowering and fruit-set during weather that is sufficiently warm and dry to ensure pollination and predispose toward simultaneous ripening,
- (3) The gradual onset of water stress thanks to a warm, dry month of July in order to slow down and then put a definitive stop to vine growth during *véraison* (colour change),
- (4) Full ripening of the various grape varieties thanks to dry and warm (but not excessively so) weather in the months of August and September,
- (5) Fine (dry and medium-warm) weather during the harvest making it possible to pick at mid-ripeness without running the risk of dilution or rot.

Even though flowering in Merlot was not ideal due to slightly cool, wet weather in June that caused *coulure* (shot berries), *millerandage* ("hens and chickens"), and low yields, 2010 fits all the above conditions thanks to a remarkably dry summer (but without any heat waves) that continued into a sunny, medium-warm autumn with average precipitation. The vines underwent greater and more widespread water stress in 2010 than in 2009. In that respect, 2010 is more similar to 2005 than 2009.

The moderately warm daytime temperatures and cool nights in August and September encouraged the synthesis of aroma precursors and maintained good acidity in the grapes. This means that 2010 was also a very great vintage for white wines, as much for Sauvignon Blanc as for Sémillon.

The development of noble rot at the right time, as soon as the grapes are ripe, i.e. sufficiently sweet, but potentially fruity and still retaining good acidity, determines whether a vintage will be great in Sauternes and Barsac. This calls for alternating periods of mist or fog (conducive to the spread of botrytis) and drier, warmer, or more windy periods to concentrate the grapes. Without being as tremendously concentrated as 2009, 2010 will undoubtedly be a great vintage for sweet white Bordeaux, and a fitting end to an outstanding decade with an uninterrupted run of good-to-excellent vintages, the like of which has never been seen in the region.

## Early and fairly quick flowering at the beginning of June, followed by satisfactory fruit set in all grape varieties except for Merlot (affected by *coulure* and *millerandage*)

Marked by three cold waves in mid-December, early January, and mid-February, the winter of 2010 was as grey, long, and harsh as 2009 (Tables I to III). Subsequent to a cold winter and a month of March close to the seasonal average (Figure 1) it was impossible for bud break to happen early. This thus occurred from early to mid-April, just a few days later than 2009 and 2008. However, the vines made up for this slight delay thanks to a sunny, warm, and remarkably dry month of April (Tables I-III).

**Table I:**

*Rainfall (mm) from January to June in 2010 and 2009 compared to the 1971-2000 average*
*(Météo France Bordeaux Mérignac)*

| | **2010** | 2009 | Average 1971-2000 |
|---|---|---|---|
| January | **77** | 128 | 91 |
| February | **54** | 33 | 83 |
| March | **68** | 31 | 70 |
| April | **27** | 116 | 80 |
| May | **41** | 78 | 83 |
| June | **102** | 75 | 63 |

**Table II:**

*Sunshine (hours) from January to June in 2010 and 2009 compared to the 1991-2000 average*
*(data from Météo France Bordeaux Mérignac)*

| | **2010** | 2009 | Average 1991-2000 |
|---|---|---|---|
| January | **86** | 90 | 108 |
| February | **103** | 136 | 114 |
| March | **187** | 221 | 180 |
| April | **250** | 160 | 177 |
| May | **193** | 235 | 222 |
| June | **102** | 293 | 225 |

**Table III:**

*Average minimum and maximum temperatures from January to June in 2010 and 2009 compared to the 1971-2000 average*
*(data from Météo France Bordeaux Mérignac)*

| | Average minimum temperatures | | | Average maximum temperatures | | |
|---|---|---|---|---|---|---|
| | **2010** | 2009 | average | **2010** | 2009 | average |
| January | **0.8** | 1.6 | 2.8 | **6.9** | 8.8 | 10 |
| February | **2.4** | 2.6 | 3.4 | **10.1** | 11.5 | 11.7 |
| March | **4.3** | 4.9 | 4.6 | **14.4** | 15.3 | 14.5 |
| April | **8.3** | 7.4 | 6.6 | **19.8** | 13.4 | 16.5 |
| May | **10.4** | 12.3 | 10.3 | **19.9** | 22.2 | 20.5 |
| June | **14.3** | 15 | 13 | **24.5** | 25.6 | 23.5 |

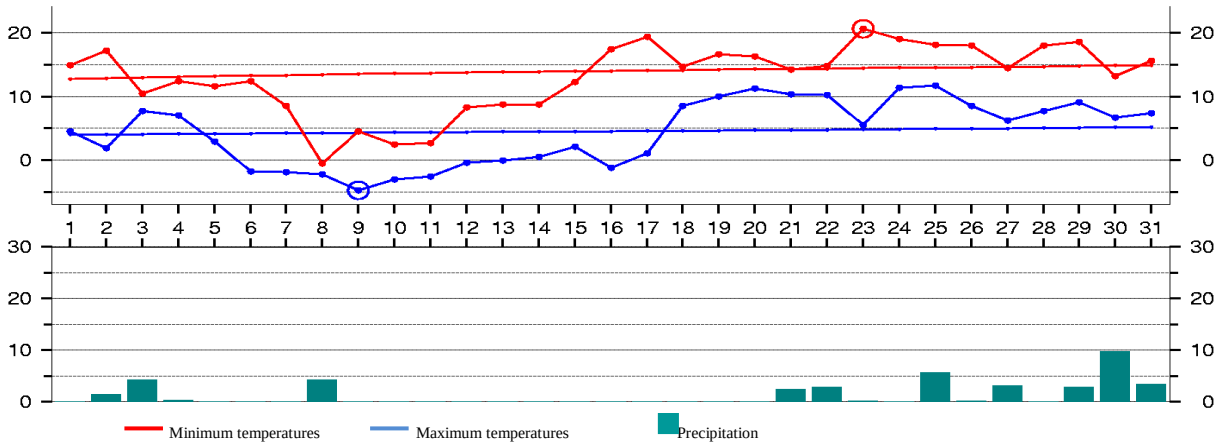


**Figure 1:**

*Variations in temperature and precipitation in March 2010*
*(data from Météo France Bordeaux Mérignac)*

May was also fairly dry, but slightly cooler and more overcast than in 2009. Cold weather returned in early May and it was necessary to wait until the 18th for an anticyclone to produce a warm, dry airstream. The temperature rose from then until the 26th, becoming very high for the season, and even going above 30°C on the 24th of May. However, the thermometer dropped once again starting on the 26th and the weather turned cool and dismal for several days. This meant that May 2010 was the coolest month of May of the decade: 0.7°C lower than average and accompanied by a decided lack of rainfall – just 41 mm compared to the average of 83 mm (Tables I-III).

The first vines started flowering in late May, and mid-flowering in Merlot and Cabernet occurred between the 4th and the 9th of June in our reference vineyards, i.e. several days later than in 2009 (Table IV). However, for 14 days, from the 6th to the 19th of June, the weather was turbulent and occasionally very cool. Storms broke out with strong cumulative of rainfall. Such conditions were not conducive to pollination. Whereas most white and red wine varieties experienced satisfactory fruit set, Merlot grapes were affected by *coulure* (shot berries) and *millerandage* ("hens and chickens"). As usual, old Merlot vines, often affected by viral diseases, suffered the heaviest crop losses. The perturbed flowering of Merlot is the only shortcoming of the 2010 vintage.

**Table IV:**
*Mid-flowering and mid-colour change dates in 2010 compared to 2009, 2008, 2007, 2006, and 2005, and the average of the last 10 years*

| Period | Mid-flowering | Mid-colour change |
|---|---|---|
| 1999 -2009 | 2 June | 6 August |
| 2005 | 30 May | 3 August |
| 2006 | 4 June | 6 August |
| 2007 | 26 May | 3 August |
| 2008 | 11 June | 15 August |
| 2009 | 5 June | 3 August |
| **2010** | **9 June** | **9 August** |

## A hot, sunny, and dry month of July entailing a slowing down and stoppage to vine growth at the beginning of *véraison* (colour change).

July 2010 was hot, mainly due to especially high minimum temperatures at the beginning of the month (Figure 2). With a monthly regional temperature 1.3°C above average, 2010 arrived in eight place with regard to the past decade. This was nevertheless farm from the record of +3.9°C set in 2006.

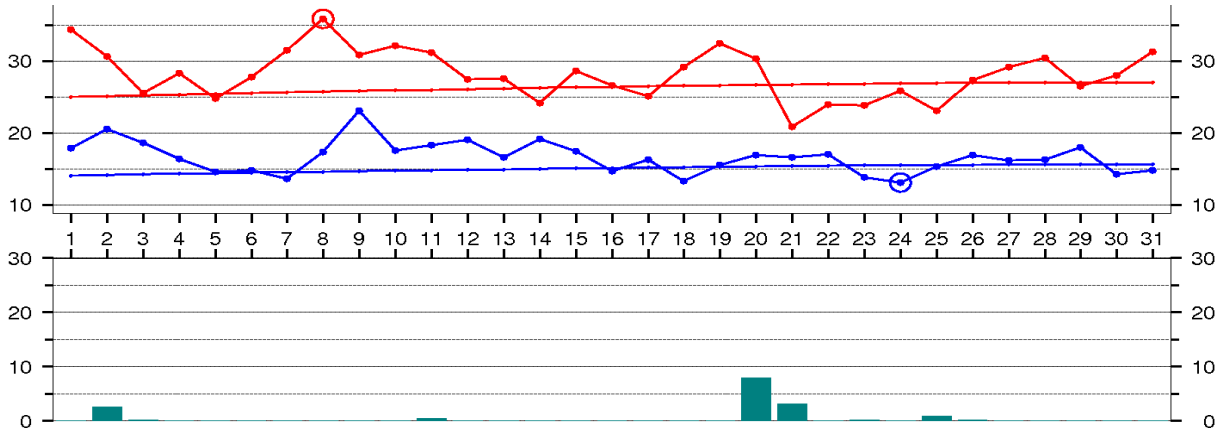


**Figure 2:**
*Daily variations in temperature and precipitation in March 2010*
*(data from Météo France Bordeaux Mérignac)*

By late June, cumulative temperatures above 10°C from January amounted to an average of 573.6 degree days in the Gironde department, which was less than recent vintages, including 2004. However, the high temperatures in early July reversed this tendency and, by mid-July, the base 10 cumulative total was 721.5 degree days, which puts the 2010 vintage close to 2008 (722.8 degree days) and 2009 (743.7 degree days) (Figure 3). The vines were thus able to make up partly for the delay in flowering.

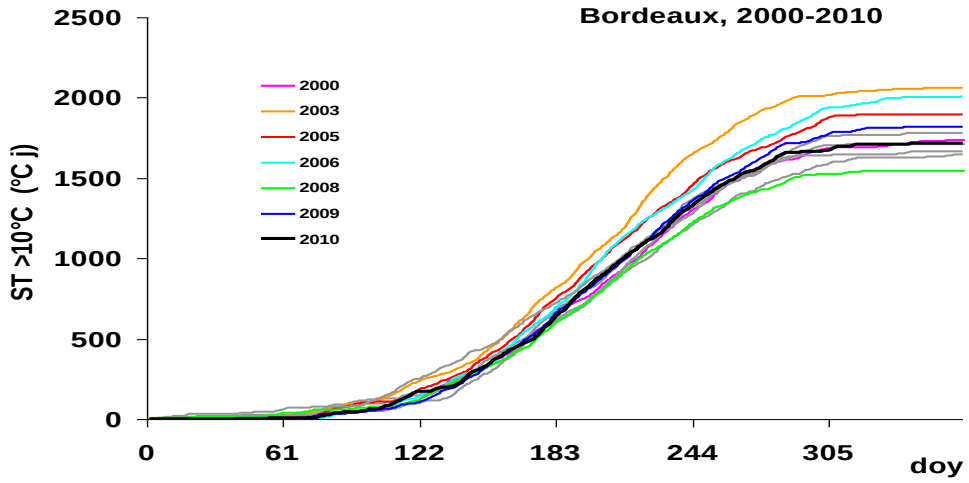


**Figure 3:**
*Variation in cumulative temperatures in base 10 (°C days) for the year 2010*
*Data from INRA (Philippe PIERI)*

July 2010, was warmer than that same month in either 2009 or 2005, but without a heat wave as such since the maximum temperature only went above 30°C on three or four days. July also had slightly above-average sunshine and, significantly, was much more dry than usual (Figure 4). Precipitation during this month (less than 20 mm) was only a third of that in July 200, and even less than in July 2005. Water stress thus gradually set in starting in late July 2010. This brought a complete halt to vine growth between the onset of *véraison* and mid-*véraison*.

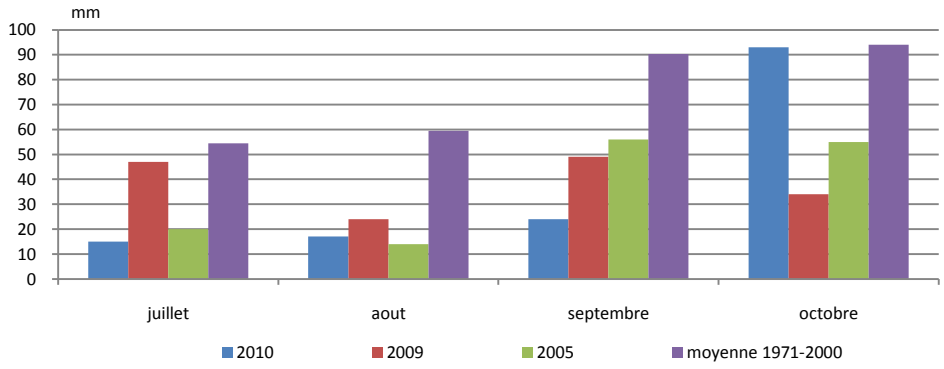


**Figure 4:**
*Rainfall (mm) from July to October in 2010, 2009, and 2005 compared to the 1971-2000 average*
*(Météo France Bordeaux Mérignac)*

In 2009, because of greater rainfall in July, this condition *sine qua non* for quality in successful red wine vintages in Bordeaux was only satisfied on soils with the lowest water reserves (mainly gravel and certain clay soils) i.e. the finest *terroirs* in Bordeaux. The halt to vine growth at the appropriate time was much more widespread in 2010 than in 2009.

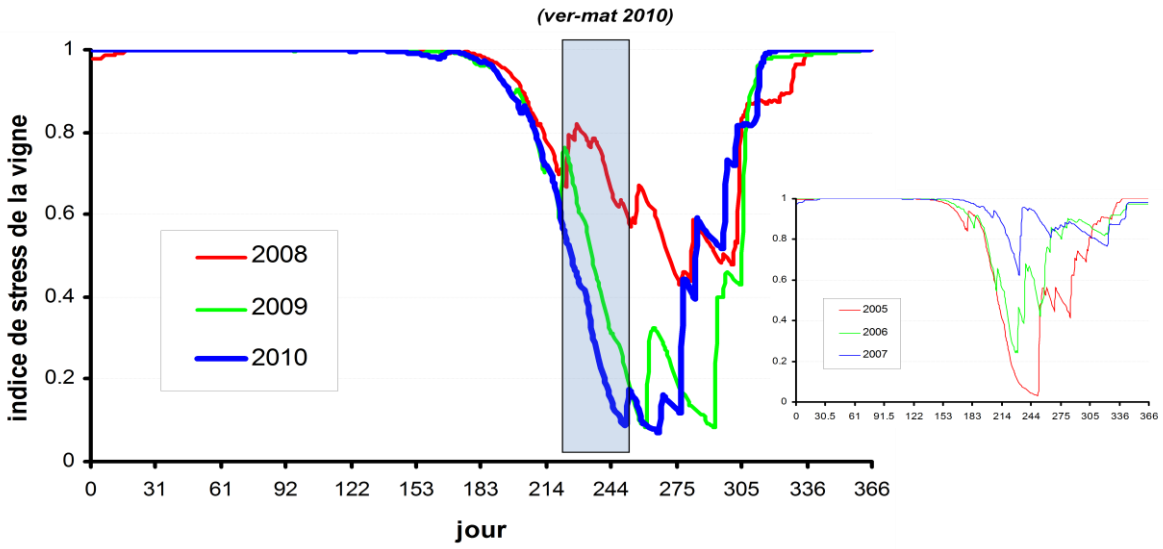


**Figure 5:**
*Variation in the water stress index in 2010 compared to 2008 and 2009*
*Data from INRA (Philippe PIERI).*

Mid-*véraison* (colour change) occurred about the 6th of August for Merlot and around the 11th of that same month for Cabernet Sauvignon, i.e. 3-4 days later than in 2005 and 2009, and 4 days early than in 2008 or 2004.

## Ideal ripening for all grape varieties throughout Bordeaux thanks to an exceptionally dry August and September, without excessive heat

The weather in early August was relatively cool and cloudy. However, starting on the 19th of that month, summer weather returned. This lasted until the harvest and led to optimum ripening for all grape varieties throughout Bordeaux.

In 2009, only the Médoc was spared by August storms, and the Libourne region experienced significant rainfall around the 20th of September. August, and to an even greater extent, September 2010 were very dry in all Bordeaux appellations (Figure 6). Precipitation in August was less than a third of the previous ten year average and the September figure was barely a quarter of the average for that month (Figure 4). With just 50 mm of precipitation from July to September, the 2010 vintage was the driest of the decade (figure 7), even more than 2005, which had almost twice as much rain over the same period.

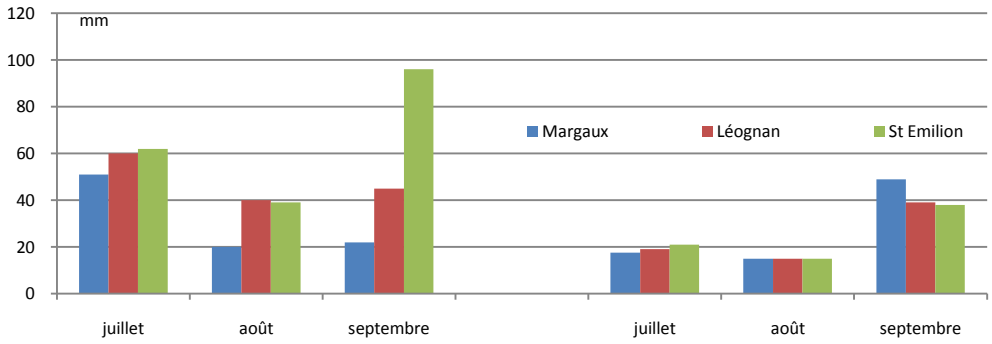


**Figure 6:**
*Rainfall (mm) in July, August, and September 2009 and 2010 in various communes*

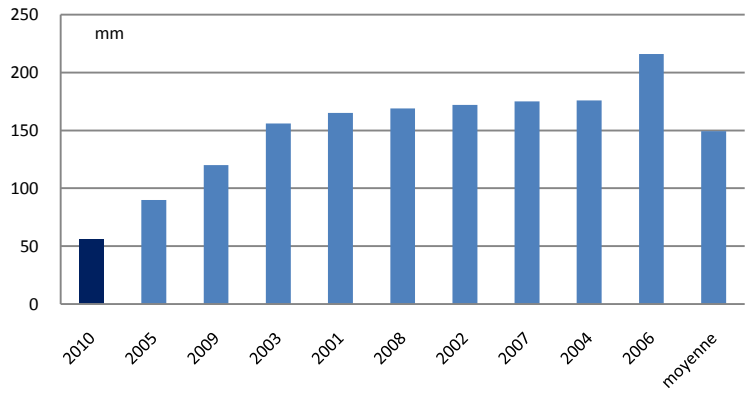


**Figure 7:**
*Ranking of vintages by order of precipitation from July to September over a 10-year period (2001-2010)*
*(Data from Météo France, Bordeaux Mérignac)*

Despite this, evapotranspiration was average (Figure 8) and did not cause a dramatic stop to water circulation. In certain instances, water stress was relatively strong, leading to fears of suspended ripening but, in the total absence of a heat wave, this was limited to certain young vines on soils that were very permeable *terroirs* on the Left Bank. The vines resisted the drought conditions astonishingly well, especially in vineyards with ploughed soil.

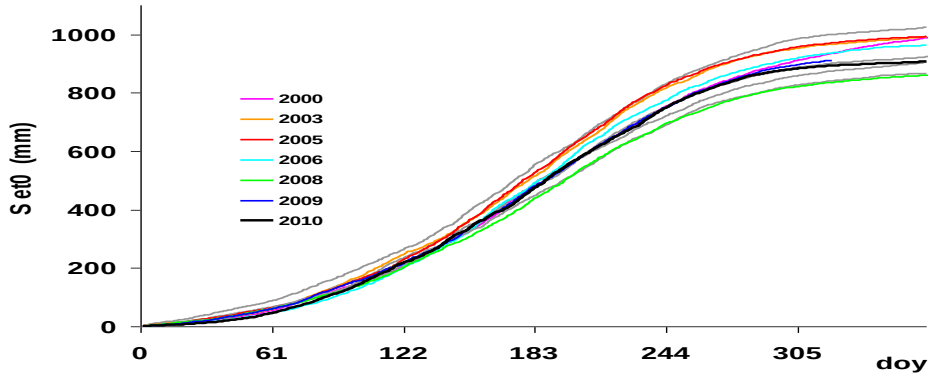


**Figure 8:**
*Variations in evapotranspiration in 2010*
*Data from INRA (Philippe PIERI)*

August 2010 was cooler than the same month in 2009 or 2005, while remaining close to the 30-year average (Table V). The sum of average daily temperatures in Margaux in August 2010 was 605°C compared to 650 in 2009 and 625 in 2005. There were 6 very hot days in 2010, 8 in 2009, and 7 in 2005. The thermometer went below 15°C on 21 nights in August 2010, compared to 18 in 2009 and 22 in 2005 (Table VI).

**Table V**

*Average minimum and maximum temperatures from August to October 2009 and 2010 compared to the 1971-2000 average (data from Météo France Bordeaux Mérignac)*

| | Average minimum temperatures | | | | Average maximum temperatures | | | |
|---|---|---|---|---|---|---|---|---|
| | **2010** | 2009 | 2005 | average | **2010** | 2009 | 2005 | average |
| August | **14.9** | 16.2 | 15.1 | 15.2 | **26.8** | 28.5 | 27.3 | 26.6 |
| September | **12.3** | 13.2 | 13 | 12.5 | **24.4** | 25.7 | 24.1 | 23.7 |
| October | **9.2** | 10.9 | 12.6 | 9.5 | **18.7** | 20.8 | 21.5 | 18.8 |

**Table VI**

*Sums of average temperatures, number of very hot days, and number of cool nights in Margaux in August 2005, 2009, and 2010*

| | Sum of average daily temperatures ( °C) | Number of very hot days (Temperatures max > 30°C) | Number of cool nights (T°C min < 15°C) |
|---|---|---|---|
| 2005 | 625 | 7 | 22 |
| 2009 | 650 | 8 | 18 |
| **2010** | **605** | **6** | **21** |

Starting on the 28th of August, although the weather remained very sunny, temperatures suddenly dropped below the seasonal average. Night-time temperatures were particularly cool, which was extremely beneficial to the accumulation of anthocyanins in red wine grapes and the retaining of aromas in white wine grapes. Less warm than in 2009, September 2010 had maximum temperatures comparable to 2005, but markedly cooler night-time temperatures (Table V).

Sunshine in August 2010 was close to the seasonal average. On the other hand, September and October 2009 were much more sunny than usual (Figure 5).

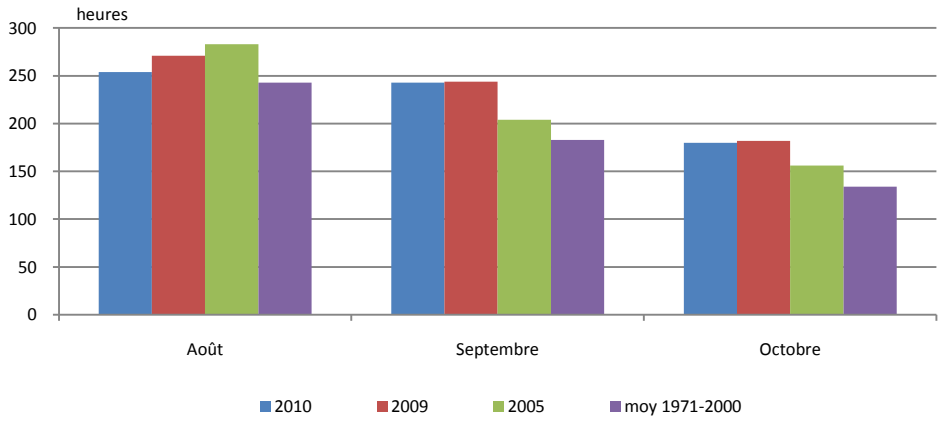


**Figure 9:**

*Sunshine (hours) from August to October in 2010, 2009, and 2005 compared to the 1971-2000 average (Météo France Bordeaux Mérignac)*

The weather was once again hot and dry in early September. The temperature went up from the 1st to the 5th, coming close to 30°C. The atmospheric pressure dropped on the 6th and storms swept the region from west to east on the 7th, bringing moderate cumulative rainfall that enabled the vines to finish ripening without suffering from the dry conditions (figure 10). The weather turned calm, mild, and sunny from the 11th to the 20th of September, with cool nights conducive to very deep colour in the skins. This was especially ideal for Merlot.

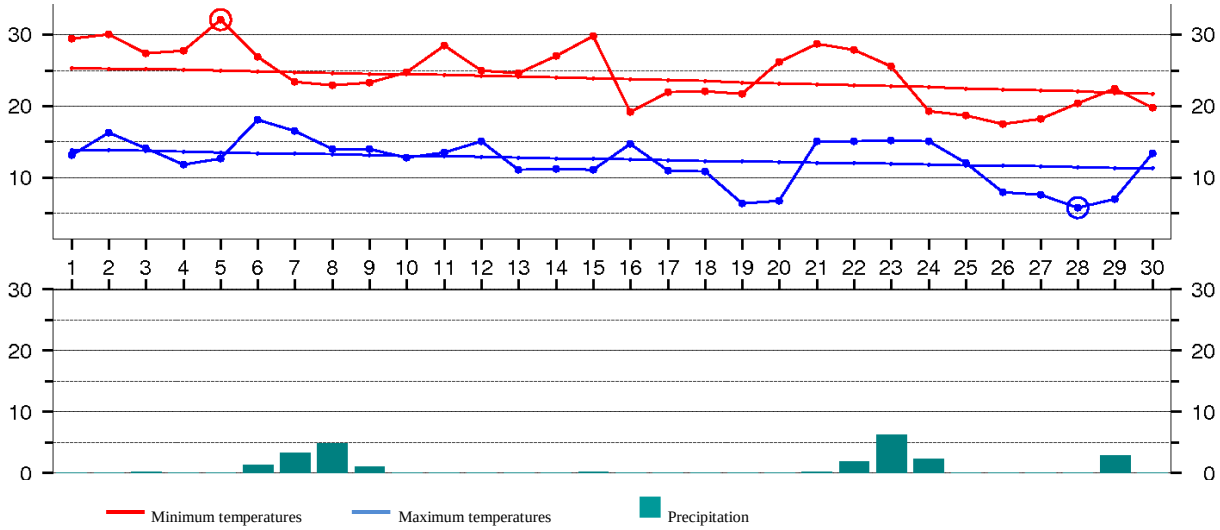


**Figure 10:**
*Daily variations in temperature and precipitation in September 2010*
*(data from Météo France Bordeaux Mérignac)*

In late September, autumn weather set in, with sunny days and cool nights, but without precipitation. These idyllic conditions lasted until mid-October, enabling Cabernet Sauvignon to ripen fully and obtain very promising levels of extractable anthocyanins.

In a nutshell, summer and early autumn 2010 were drier and less warm (except for July) than either 2009 or 2005. The limited rainfall from July to mid-October was certainly the key factor in the success of the red wines in 2010 because, in an oceanic climate with wet winters like in Bordeaux, every dry summer produces very great vintages – with no exceptions to this rule. The reverse, however, is not necessarily true. Good wines are sometimes made in years with average rainfall in the months of August and September provided that July was warm enough to put a stop to vine growth at *véraison*, as was the case in 2008. The relatively cool, sunny weather that prevailed in 2010 during ripening was propitious to preserving good fruit and acidity. This was decisive for both the quality of white wines and the style of red wines.

## Ideal conditions from beginning to end of the harvest making it possible to pick each plot and each grape variety at peak maturity

Picking of white wine grapes began on the 2nd of September in the most early-ripening plots of Sauvignon Blanc and the harvest was widespread from the 6th to the 15th. Sémillon grapes at estates in the Graves and Pessac-Léognan appellations were picked between the 15th and the 20th of September. The 2010 white wines had sugar levels comparable to 2009 and 2005 with slightly higher acidity, close to 2008, provided that they were picked at the right time. When the grapes were tasted, the aromatic potential of Sauvignon Blanc and Sémillon, especially from limestone and clay soils, seemed greater than in 2009. However, great care needed to be taken in selecting juice out of the winepress because the potassium content of the skins was very high. In order to maintain acidity, skin contact had to be limited and the juice separated fairly early.

The earliest-maturing Merlot grapes were picked on about the 21st of September and the Cabernets in the first half of October. These dates are fairly similar to 2009. All of the 2010 red wine varieties had two outstanding characteristics indicative of their excellent quality: the berries were both very small and deeply coloured, and had a higher anthocyanin content than in 2009 or even 2005 (figures 11 and 12).

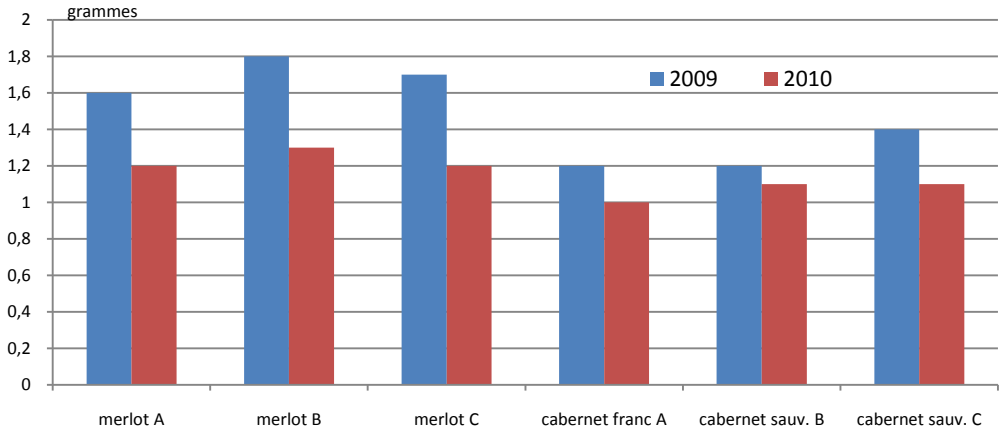


**Figure 11:**

*Weight of Merlot, Cabernet Franc, and Cabernet Sauvignon berries in 2009 and 2010 in plots of classified growth vineyards in Saint Emilion (A), Léognan (B) and Pauillac (C)*

The sugar levels in 2010 red wine musts were generally and significantly higher than in either 2009 or 2005, especially for the Cabernets. The level of acidity in the various grape varieties in 2010 was comparable to or slightly higher than in 2009 or 2005 (Table VII).

**Tableau VII**

*Variations in sugar content and acidity during ripening*

| | Weight per 100 berries (g) | Sugar (g/l) | TA (g/L $H_2SO_4$) |
|---|---|---|---|
| **2010** | mg/L | | |
| 30/8 Merlot | 120 | 198 | 4.3 |
| Cabernet Sauvignon | 101 | 171 | 6.1 |
| 22/9 Merlot | 125 | 242 | 3 |
| 27/9 Cabernet Sauvignon | 108 | 225 | 3.6 |
| **2009** | | | |
| 31/8 Merlot | 148 | 231 | 3.8 |
| Cabernet Sauvignon | 126 | 202 | 5.7 |
| 22/9 Merlot | 148 | 253 | 3.1 |
| Cabernet Sauvignon | 132 | 216 | 3.8 |
| **2005** | | | |
| 29/8 Merlot | 124 | 224 | 3.2 |
| Cabernet Sauvignon | 99 | 197 | 4.9 |
| 12/9 Merlot | 124 | 243 | 2.7 |
| Cabernet Sauvignon | 112 | 219 | 4.1 |

Weather conditions in September also led to the perfect ripening of the grape skins. Light showers at the beginning of the month meant that anthocyanin synthesis was not blocked. These anthocyanins therefore accumulated very early, and in large quantity. The dry, sunny weather that followed, accompanied by cool nights, facilitated their stability as well as the slow, regular increase in their extractability. The discrepancy between the maturity of the pulp and phenolic maturity was even more striking this year. However, thanks to the fact that the grapes were left on the vine until the end of September, the skins and seeds were perfectly ripe (Figure 12).

As in 2009, the harvest dates for the same grape variety on comparable *terroirs* varied significantly according to the estate, some of which sought a degree of overripeness resembling raisining, while others chose to avoid this. The style of wine thus depends considerably on what choice was made in this respect.

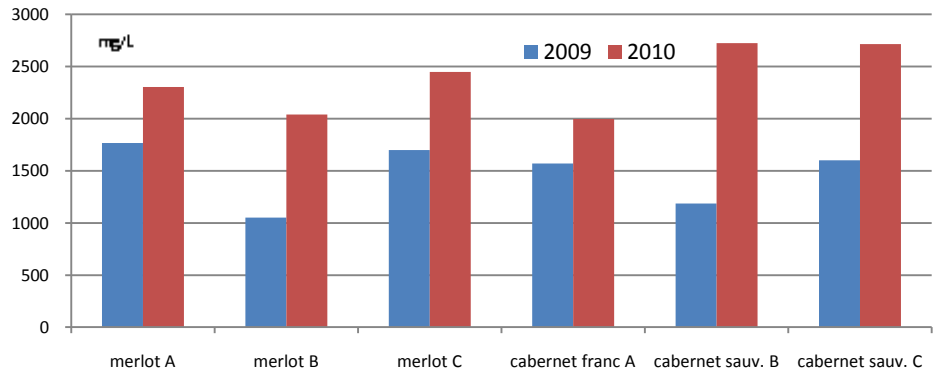


**Figure 12:**
*Total anthocyanin content (mg/L) of Merlot, Cabernet Franc, and Cabernet Sauvignon berries in 2009 and 2010 in plots of classified growth vineyards in Saint Emilion (A), Léognan (B), and Pauillac (C)*

Those plots that underwent suitable leaf thinning and green harvesting were largely devoid of any herbaceous characteristics and had brilliant fruit. When temperatures are overly cool during ripening, later-maturing Cabernet Sauvignon can display "green pepper" flavours associated with perceptible amounts of *isobutyl methoxypyrazine* (IBMP). In 2010, despite relatively low nocturnal temperatures, the breaking down of IBMP in grapes was regular and the levels consistently ended up lower than the olfactory perception threshold (15 ng/L) when it came time to pick (Figure 13).

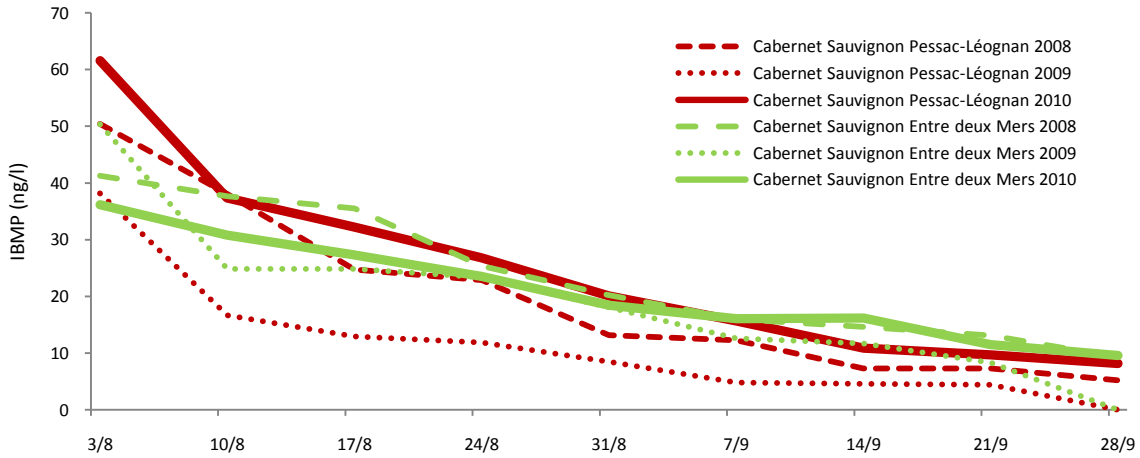


**Figure 13:**
*Variations in levels of IBMP during ripening of Cabernet Sauvignon grapes in 2009 and 2008*

In the Sauternes region, the harvest did not really begin until late September, after botrytis set in, to a degree that varied depending on the estate (Figure 14). Noble rot became widespread in October subsequent to showers on the 3rd and 4th, and then again on the 9th and 10th of that month (Figure 15). The resulting concentration over the next two weeks without rain was remarkable (20-22 degrees potential alcohol), although not as impressive as the 2009 vintage. The sugar content in the must was enhanced because botrytis arrived early and was therefore able to concentrate the grapes in the first two weeks of October before the temperatures dropped.

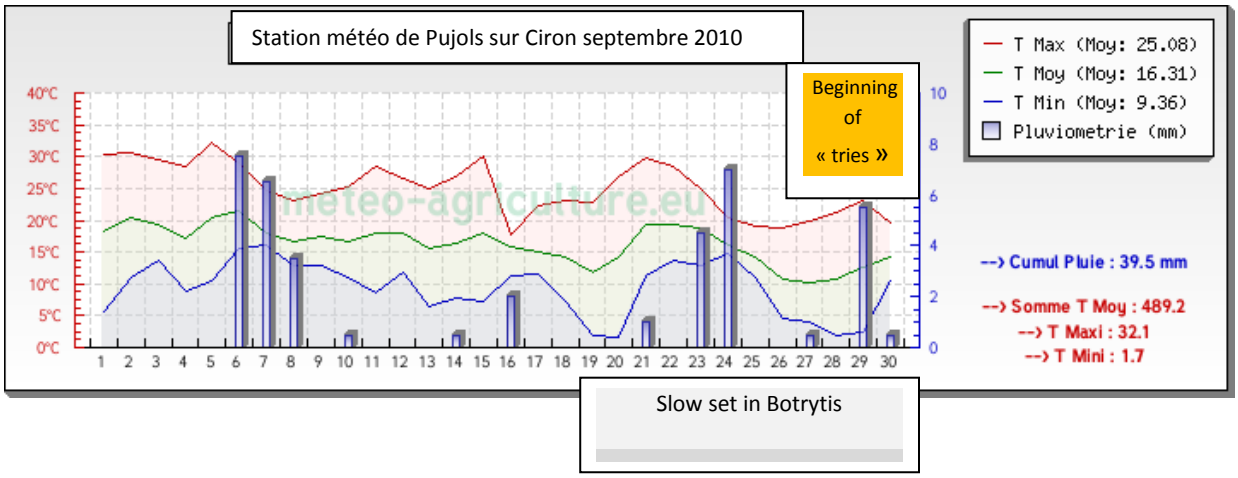


**Figure 14:**

*Temperatures (°C), precipitation (mm) and humidity (%) in September 2010 in the Sauternes region (beginning of picking at the end of the month)*

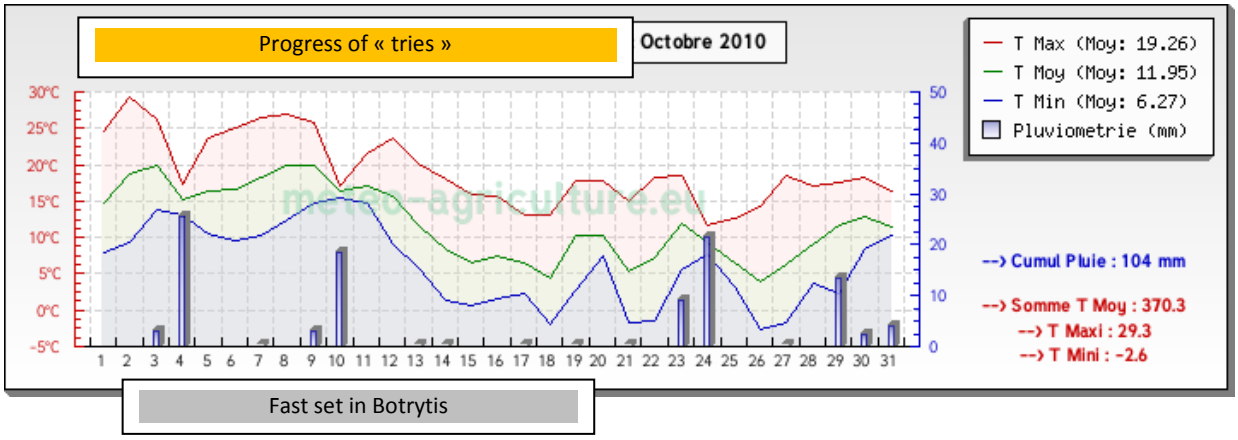


**Figure 15:**

*Temperatures (°C), precipitation (mm) and humidity (%) in October 2010 in the Sauternes region (remainder of the harvest)*

**Great white wines and very great red wines**

It is now possible to evaluate the 2010 dry white wines. These have bright fruit and are remarkably smooth. They are even more complex than the 2008s and 2007s, and more vibrant than the 2009s.

2010 Sauternes and Barsac 2010 are aromatic, concentrated, tasty and without heaviness. They are hardly any less powerful, than the prodigious 2009 vintage, but are perhaps more "digestible".

The 2010 red wines have all the hallmarks of a very great Bordeaux vintage on both banks, and for both Merlot and Cabernet. It is premature to describe the wines in detail, but their deep colour, complexity, intense fruit, freshness, and tannic density already indicate enormous potential. Liquid beauty!