The 2011 Vintage in Bordeaux

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The 2008, 2009, and 2010 vintages, the culmination of a highly unusual decade including only good and great years, constitute an admirable trilogy. Wine enthusiasts the world over will compare their relative qualities for many years to come.

Thanks to several factors – veritable summerlike weather in springtime, an early harvest, lack of sunshine in July, a month of August with above-average precipitation, and the return of summer weather in early autumn – conditions in 2011 were indeed strange, with unpredictable effects.

Leaving aside the way we usually begin this vintage report, by reviewing the parameters that account for great years in Bordeaux, we prefer to explain, phase by phase, the unusual weather in 2011 and its effects on wine quality according to soil and grape variety. We hope to show why, because of this unusual weather, that the dry white wines are astonishingly good and, despite unquestionable unevenness, there are numerous magnificent red wines on both banks made from all grape varieties, and why the wines of Sauternes and Barsac are great.

A year without spring, going directly from winter to summer, with bud break in late March and exceptionally early flowering in mid-May

After a cold wave and some snow in December 2010, the winter of 2010-2011 was above all mild and dry. Temperatures were close to normal in January and slightly above average in February. There was less than half the mean accumulated rainfall for these two months, causing drought conditions which were to leave their mark on the 2011 vintage (Table 1). The impression of a mild winter was reinforced by a drier and warmer than usual month of March, with minimum temperatures 1.5°C above average.

Thanks to these conditions, bud break was early, with the first buds appearing the last week of the month, i.e. 2 weeks earlier than in 2010.

Then, very quickly, veritable summer weather arrived and stayed for 3 months, with temperatures 3.5°C above average in April, 2.1°C above average in May, and 0.6°C more than usual in June. Sunshine was also greater than in a normal year, and the water deficit going back to winter continued (Table I).

It can be said that the summer of 2011 began in April, and several monthly records for maximum temperatures were broken. In fact, April of 2011 was the second warmest since 1900, with average maximum temperatures 6°C more than usual, and total sunshine not only more than a normal month of April, but also a normal month of July (Table I). Maximum temperatures were close to 30°C from the 7th to the 9th of April, and stayed around 25°C from the 18th to the 30th (Figure 1). The whole month remained dry, with a water deficit of -86%. In fact, there were only 10 mm of precipitation compared to 80 in an average April. However, localised showers and storms in the last ten days of April produced scattered showers across the Bordeaux vineyards. A hailstorm hit the Sauternes region on the 25th of April, causing considerable damage to approximately 500 hectares of vines. A few days later, on the 1st and 2nd of May, another hailstorm hit the commune of Podensac as well as the Entre-Deux-Mers and Blaye regions.

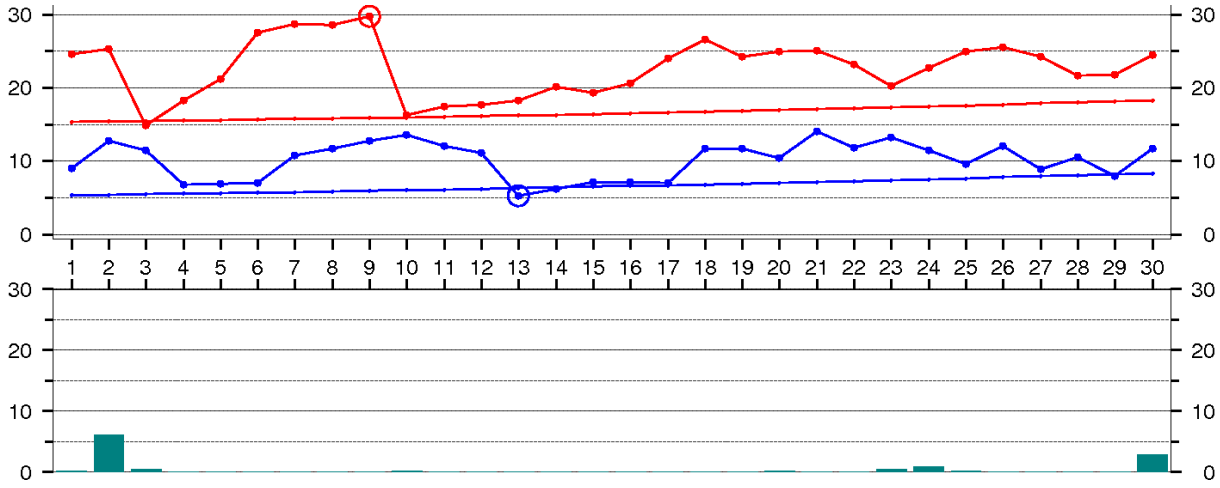

Figure 1
Daily variations in temperature and precipitation in April 2011
Data from Mérignac (Météo France)

May was a continuation of April: hot and dry. The average maximum temperature, nearly 25°C, was 4.5°C greater than usual (Table 1). Only May 1922 was hotter. The weather stayed dry, with just ten mm of precipitation in the Médoc and less than 5 mm in Saint Emilion. This was close to the absolute record going back to May 1945 (0 mm).

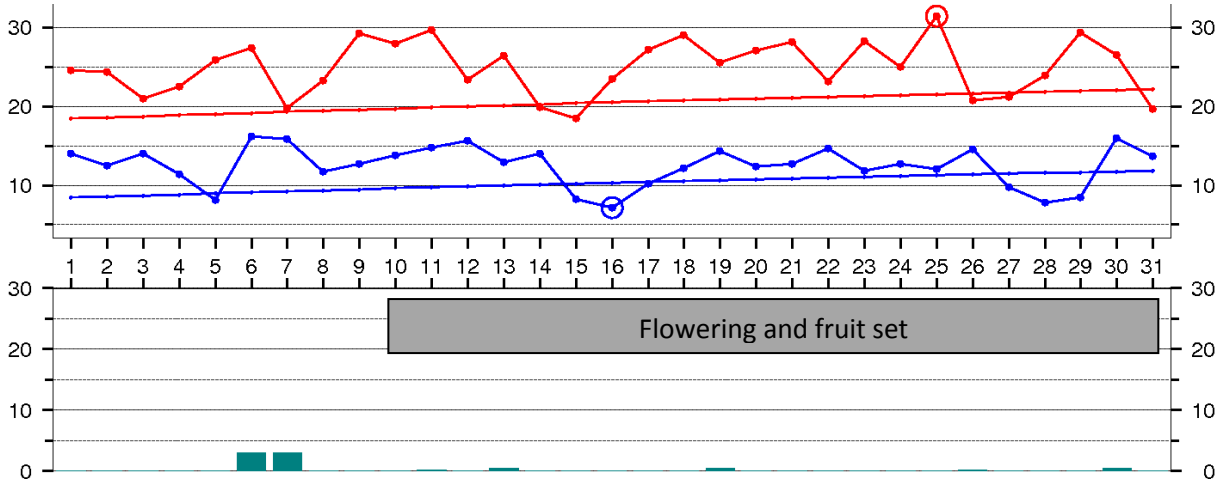

Figure 2
Daily variations in temperature and precipitation in May 2011
Data from Mérignac (Météo France)

Due to this outstandingly hot weather, several stages of the growing season were accelerated: 52 days between bud break and flowering, compared to an average of 57 days since 2004. The first flowers appeared on about the 10th of May. Happening all at once in a remarkably short space of time, flowering finished on the 20th of that same month. In our reference vineyards, the average date of mid-flowering was estimated as the 17th of May, i.e. 15 days ahead of time and the earliest date since we started keeping records in 1952 (the earliest date until then was estimated to be the 23rd of May 1997) (Table II). Obviously, there was no *coulure* (shot berries) or *millerandage* (hens and chicks), and even particularly sensitive old virus-infected Merlot vines had good fruit set.

Table I

Weather indicators for 2011: rainfall and temperature (compared to the 1971-2000 average) and hours of sunshine (compared to the 1991-2000 average) Data from the Météo-France weather station in Mérignac

	Precipitation (mm)		Hours of sunshine (h)		T°C average minimum (°C)		T°C.average maximum (°C)	
	2011	Difference % 1971-2000	2011	Difference % 1991-2000	2011	Difference (°C) 1971-2000	2010	Difference (°C) *1971-2000*
January	27	*-71%*	116	*+8%*	2.6	*-0.2*	9.3	*-0.7*
February	62	*-25%*	106	*-8%*	4	*+0.7*	13.1	*+1.4*
March	34	*-51%*	173	*-4%*	6.2	*+1.6*	15.9	*+1.4*
April	11.2	*-86%*	279	*+57%*	10.1	*+3.5*	22.7	*+6.2*
May	7.6	*-91%*	304	*+37%*	12.4	*+2.1*	24.9	*+4.4*
June	2.6	*-68%*	207	*-8%*	13.6	*+0.6*	24.8	*+1.3*
July	60.1	*+10%*	200	*-18%*	14.8	*-0.3*	24.8	*-1.6*
August	89.2	*+50%*	244	-	16.3	*+1.1*	27.4	*+0.8*
September	24.5	*-73%*	220	*+20%*	14.2	*+2.4*	25.5	*+1.8*
October	39.7	*-58%*	188	*+40%*	9.9	*+0.4*	22.1	*+2.4*

Table II

Mid-flowering and mid-véraison dates in 2011 compared to 2010, 2009, 2008, 2007, 2006, 2005, and 1997, and the average of the last 10 years

Period	**Mid-flowering**	**Mid-véraison**
2000-2010	2 June	6 August
1997	23 May	29 July
2003	27 May	29 July
2005	30 May	3 August
2006	4 June	6 August
2007	26 May	3 August
2009	5 June	3 August
2010	9 June	9 August
2011	**17 May**	**21 July**

After flowering, the month of June experienced variable weather: warmer than average, but less so than in 2009 and 2005, and still very dry (Table I). Temperatures were sometimes warm and sometimes cool compared to seasonal norms, and the beginning of water stress slowed down vine growth at fruit set.

Therefore, the first two conditions that affect the quality of a good red wine vintage in Bordeaux, i.e. quick, early flowering and the beginning of water stress at fruit set thanks to hot, dry weather, were fully met by mid-June.

However, persistent drought conditions on gravel soils with low water reserves remained worrying. How would the vines go on to cope with summer heat? The growth cycle's outstanding head start gave cause for concern. Were things not headed towards another 2003?

A strange phenomenon then seemed to confirm this impression of a year with very strange weather. The thermometer went up to 40°C on the 26th and 27th of June. Grape bunches or parts thereof exposed to the afternoon sun were literally scorched. Cabernet Sauvignon on the driest soils had the heaviest losses, sometimes in excess of 20%. This loss was compounded by harvest time because the partially scorched bunches underwent uneven *véraison* (colour change) and thus needed to be removed during green harvesting. Curiously, Merlot grapes, normally more sensitive to drought than the Cabernets, were less damaged by these two tremendously hot afternoons in late June. Merlot's wide leaves probably protected the berries from the sun's unrelenting rays.

Early véraison as well, in July, accompanied by major water stress

During a "normal" year in Bordeaux with a relatively wet winter and spring, a hot, dry month of July conducive to a certain degree of water stress and a stop to vine growth at *véraison* is the third most important condition for a great vintage. However, by early July it was clear that the weather in 2011 since the end of winter was in no way "normal". Earnestly hoped for as a general rule, the prospect of a "regular" month of July inspired fears this year because there was some doubt as to the vines' ability to cope in light of the extreme drought conditions they had already experienced.

The first week of July had typical summer weather, with temperatures above 30°C. However, cool mornings were a sign that this was about to change. Starting on the 6th, a westerly-northwestly wind blew and the thermometer dropped (Figure 3). The thermal deficit was -0.3°C for minimum temperatures and the average maximum temperature was lower than in April (Table I). The lack of sunshine was also a factor, since the sun shone less than in an average year: 200 hours compared to 281 in 2010, 271 in 2009, and 243 on average from 1971-2001. The weather was disturbed until the 26th of July, with storms of varying violence, and for the first time in 6 months rainfall was slightly above average (Table I) – but still much greater than in July 2008 and 2005. The Pessac-Léognan, Graves, and Sauternes regions received much more rain than the Médoc and Saint-Emilion.

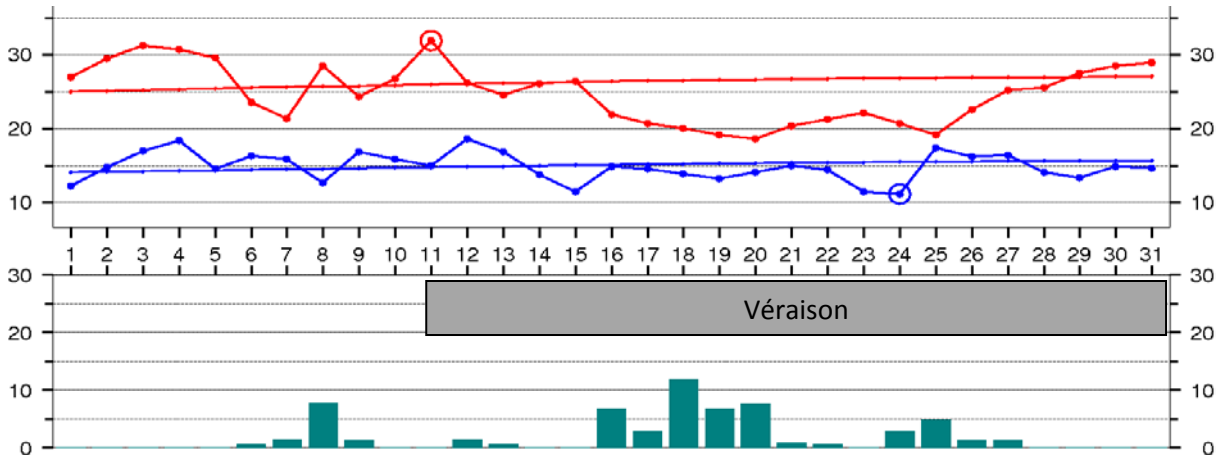

Figure 3
Daily variations in temperature and precipitation in July 2011
Data from Mérignac (Météo France)

However, the head start to the growing season was not totally lost, and the first grapes changed colour in mid-July during cool weather brought about by light showers on the 8th and 9th. There was nevertheless still major water stress (Figures 4 and 5).

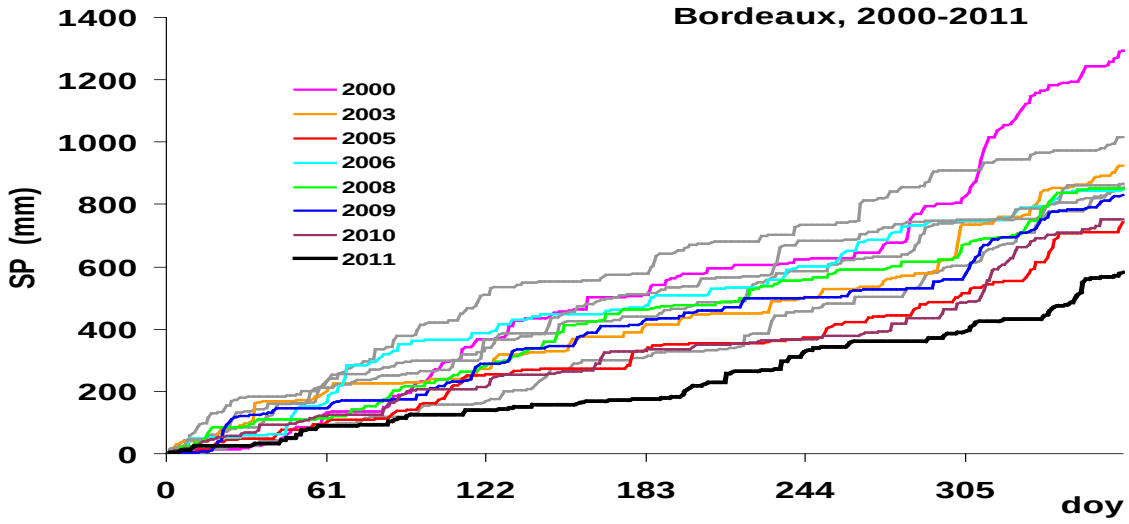

Figure 4
Accumulated rainfall (in mm) in 2011
Data from INRA (Philippe PIERI).

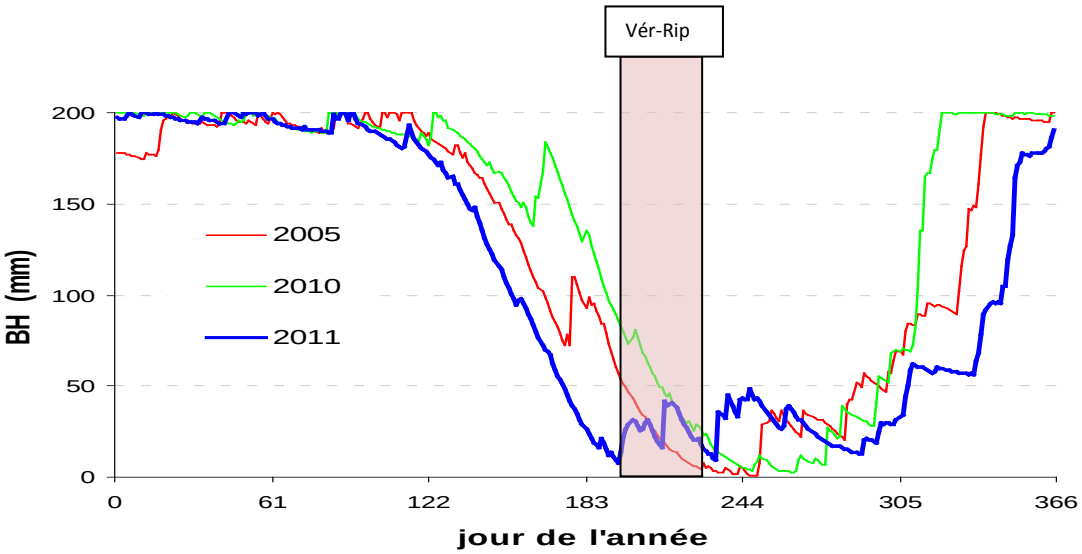

Figure 5
Variation in the water stress index in 2011 compared to 2010 and 2005
Data from INRA (Philippe PIERI).

On all good terroirs, vine growth had already come to a halt for about two weeks because of the considerable water stress. This was unquestionably excessive for Merlot on the driest soils (gravel and sand) as well as young vines that suffered from defoliation and blocked growth. With these notable exceptions, the third condition for a good red wine vintage in Bordeaux was thus satisfied.

As with flowering, mid-véraison was estimated to have occurred 15 days before the normal date, i.e. on the 23rd of July. Colour change was nevertheless much more spread out, and lasted until the 10th of August. Véraison in bunches that had been scorched in late June did not go well and many berries remained green or pink. During green harvesting, it was essential to remove these *"harlequin bunches"* at all costs.

Slow, uneven ripening for red wine grapes, with an almost autumnal month of August, followed by a particularly hot, dry September

Temperatures were once again above average in late July and the first two days of August. This brought about localised storms on the 2nd of August, with occasional torrential downpours. Thermometer readings were less than average until the 10th and a series of rain storms followed one another. The rest of the month had a normal amount of sunshine and slightly above-average temperatures (Table I).
With approximately 80 mm compared to 17 in 2010, 24 in 2009, 14 in 2005, and an average of 60 mm from 1971 to 2000, precipitation in August 2011 was close to that in 2008 (figure 6). Thunder showers in early August at the end of véraison came too late to give new impetus to ripening on certain young vines partly defoliated because of the drought. Their grapes ripened with difficulty and incompletely. August rain on deep, sandy, and silty soils swelled the berries and diluted their flavours. This phenomenon was intensified with Merlot.

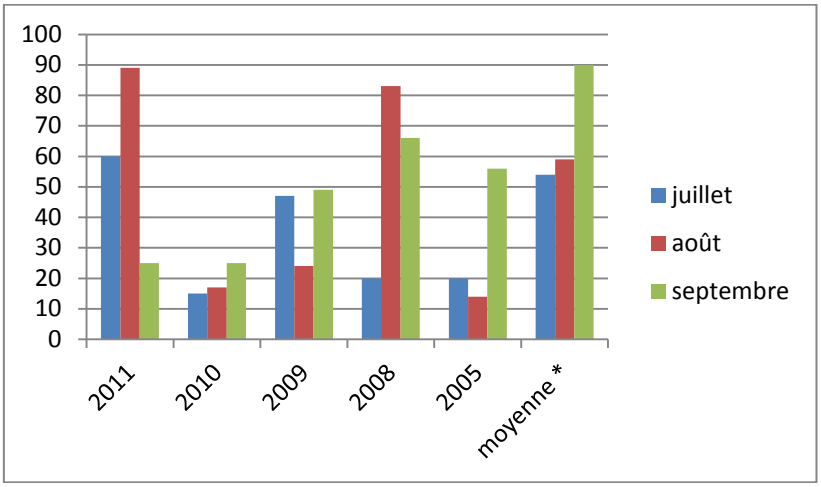

Figure 6
Rainfall (mm) from July to September in 2011, 2009, 2009, and 2005 compared to the 1997-2000 average
Data from Mérignac (Météo France)

In September, summer returned. The weather was hot and threatening from the 1st to the 3rd, with some hail. A violent hail storm on the 1st of September seriously damaged part of the Saint-Estèphe appellation. There were some 80 mm of rain on this "black Thursday". Consequently, the harvest was moved up in the worst hit Merlot plots. After a slight drop in temperature from the 4th to the 7th, a warm front with disturbed weather set in until the 16th. From the 17th to the 21st, autumnlike conditions returned, causing worries about grapes still on the vines. However, starting on the 21st, it was as though summer had come back and this fine weather lasted until the end of the harvest. The monthly accumulated precipitation did not go over 25 mm, as opposed to 90 mm on average.

During the last part of the month, night-time temperatures were cool, but the days were sunny, enabling Cabernet Sauvignon to ripen, to attain a high level of anthocyanins, and to avoid flavours attributable to *isobutylmethoxypyrazine* (IBMP).

Therefore, the fourth condition for a good red wine vintage, i.e., full ripening of the various varieties thanks to sufficiently dry months of August and September, but without excessive heat, was only partially satisfied.

An early, but spread-out harvest, with a risk of grey rot

The picking of grapes to make dry white wine began on the 17th of August and finished in early September, i.e. 2 weeks early – in keeping with flowering and véraison earlier in the year. August weather was conducive to the development of *Botrytis cinerea*, calling for careful sorting during the harvest. The 2011 white wine must had slightly lower sugar levels, greater acidity, and lower pH than 2010 or 2009. Well-integrated acidity, typical of a year with a cool summer, is unusual for an early vintage. In other words, the hottest summers, such as 2003, usually result in early-ripening vintages for dry white wines, which generally do not have good acidity and aromatic expression. Grapes in the 2011 vintage, however, owe their early ripening to the warm spring rather than to a hot summer. The relatively cool ripening period made for beautiful acidity and bright aromatics in both Sauvignon Blanc and Sémillon on the most suitable terroirs (limestone and clay).

Accompanied by similar worries about the condition of the grapes, the Merlot harvest began on the 5th of September and that of the Cabernets on around the 12th. Fortunately, the warm, dry weather that set in starting on the 10th of September put a stop to the spread of grey rot, without entirely eliminating the risk of later development. Picking of the Cabernets ended on either the last week of September or the first few days of October.

The berries were small and had a high concentration of anthocyanins. Their weight was comparable to 2010 or slightly higher, but lower than in 2009 (figure 7), with major variations according to terroir (figure 8). While the total amount of anthocyanins did not reach record 2010 levels, it was appreciably higher than in 2009 (figure 9).

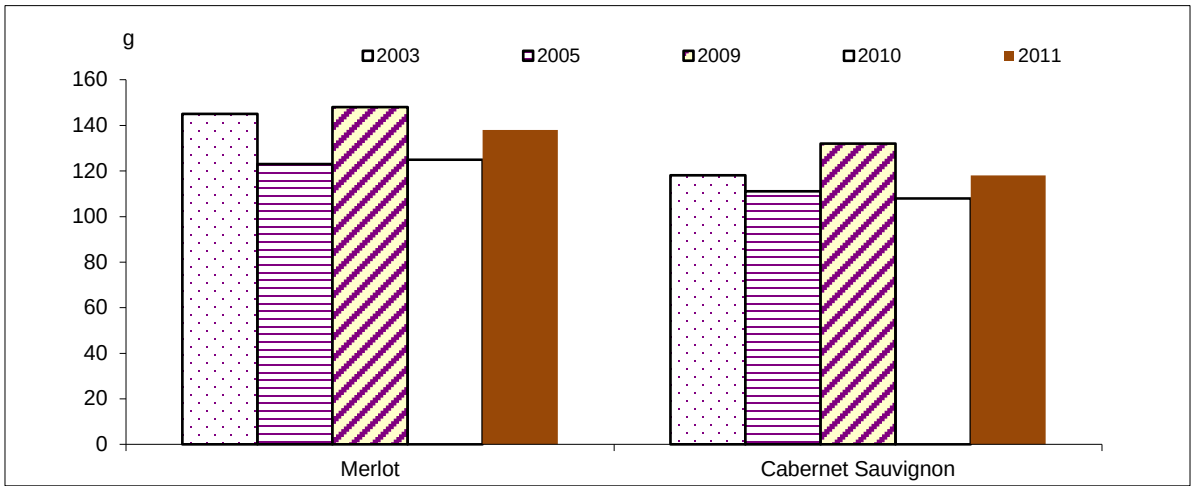

Figure 7
Average weight of 100 ripe grapes, 2011 compared to 2010, 2009, 2005, and 2003

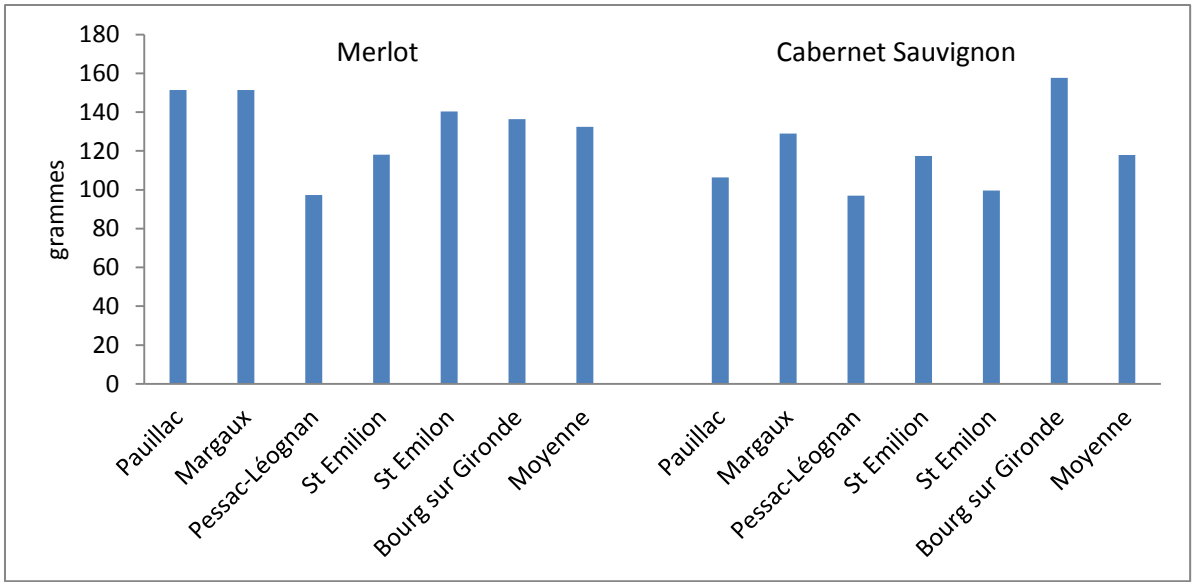

Figure 8

Average weight of 100 ripe grapes in 2011 according to terroir

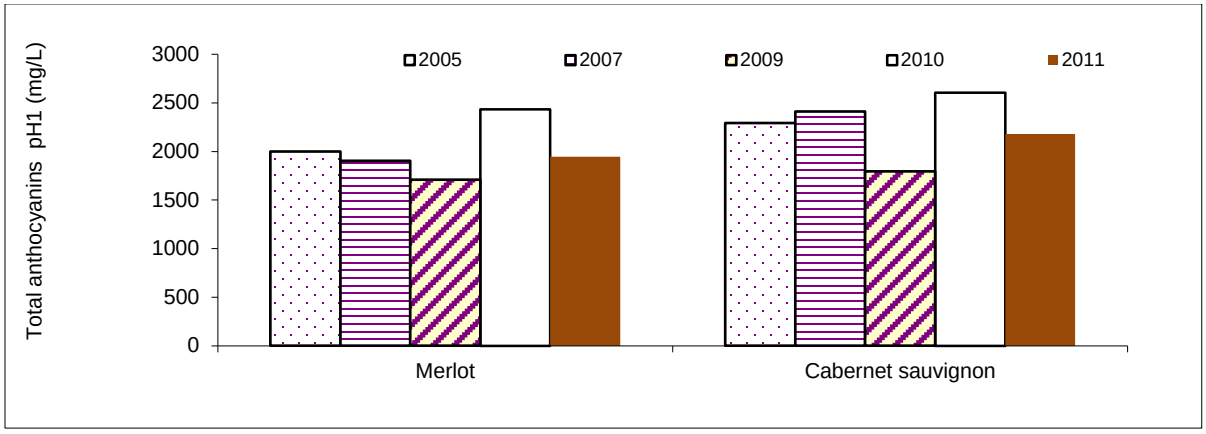

Figure 9

Total anthocyanin content (Aph1) of the 2011 vintage compared to 2010, 2009, 2007, and 2005

Levels of sugar and acidity are difficult to cite since they depended on when the grapes were picked. However, showers in July and August avoided a definitive halt to ripening without any major incidence of dilution.

Sugar levels in Merlot were generally more moderate than in 2009, and especially 2010, whereas the cabernets were comparable in this respect to 2010 and slightly higher than in 2009. The acidity in Merlot, similar to 2010, was higher than in 2009, with a lower pH, whereas both acidity and pH were extremely variable in the Cabernets depending on when the grapes were picked.

In most vineyards, the synthesis of methoxypyrazines was limited, and the concentration of these compounds associated with "green pepper" characteristics was exceptionally low (Figure 10) and markedly below the olfactory detection threshold (15ng/l).

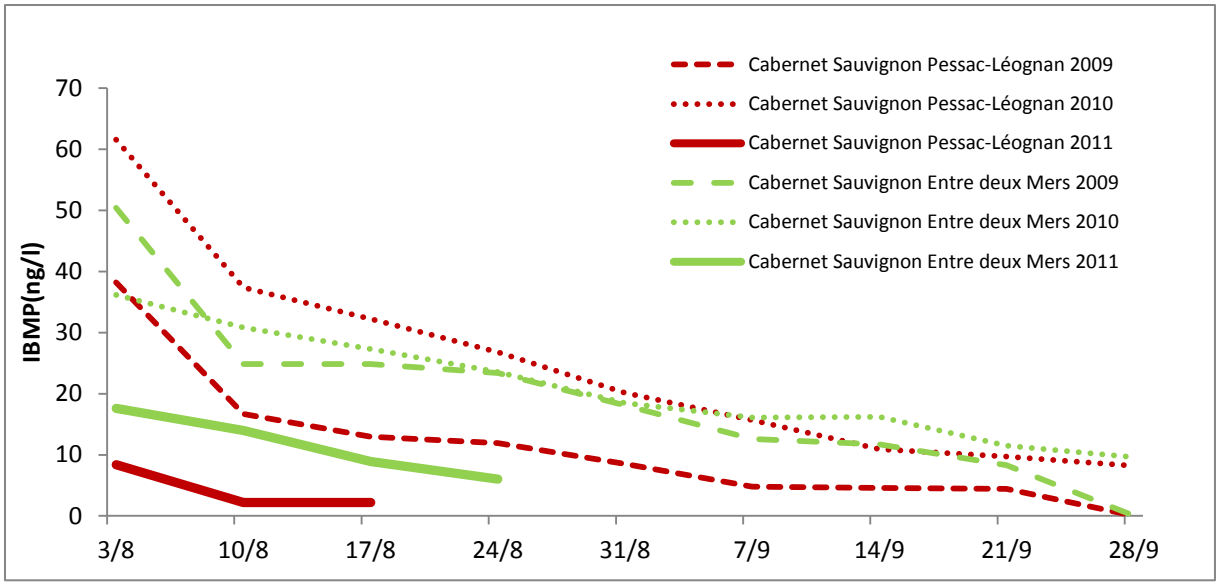

Figure 10
Variations in levels of IBMP during ripening of Cabernet Sauvignon grapes in 2009 and 2010

2011 was thus not an easy vintage. A very early water deficit, summer storms, the return of vegetative growth at véraison, and slow ripening even though the harvest was early led to a certain heterogeneity and called for close observation in the vineyard by winegrowers as well as green pruning and careful sorting to make successful red wines. The beautiful weather in September was once again quite favourable to Cabernet Sauvignon, which could stay on the vine to reach optimum ripeness. Cabernets picked at the very end of September or the first days of October were harvested later than 70 days after mid-véraison. This "hang time", as the Californians call it, is usual in the New World, but was never as long in Bordeaux as it was in 2011. Emile Peynaud castigated estates that, in his opinion, picked too soon, based on the assumption that 50-55 days after mid-véraison should be the maximum in Bordeaux. Past that time, it was generally believed that the grapes underwent a negative transformation that worked against attractive aromas and proper ageing. Other days, other ways… It will nevertheless be interesting to follow the ageing of the 2011s picked at different times.

The vintage in Sauternes began at the very end of August with a short "cleaning-up" pass in mid-August to remove grapes that were not entirely ripe, but were affected by an initial attack of botrytis. There was also a risk of sour rot on light soils and it was necessary to intervene in time to stop its spread. A full-blown wave of very pure noble rot arrived following showers in early September and morning mists during the first ten days of that month that veiled the vineyards in Barsac and Sauternes. Starting on the 8th of September, temperatures were equal to or greater than 30°C for several days. This brought about extremely rapid concentration, particularly in Barsac. Under these conditions, only a few passes (generally two in Barsac) were necessary to bring in the entire crop from the 5th to the 28th of September, coinciding with particularly hot, dry weather (figure 11). Such a vigorous burst of noble rot is rare. This phenomenon has only been seen two other times in forty years, in 2009 and 2011.

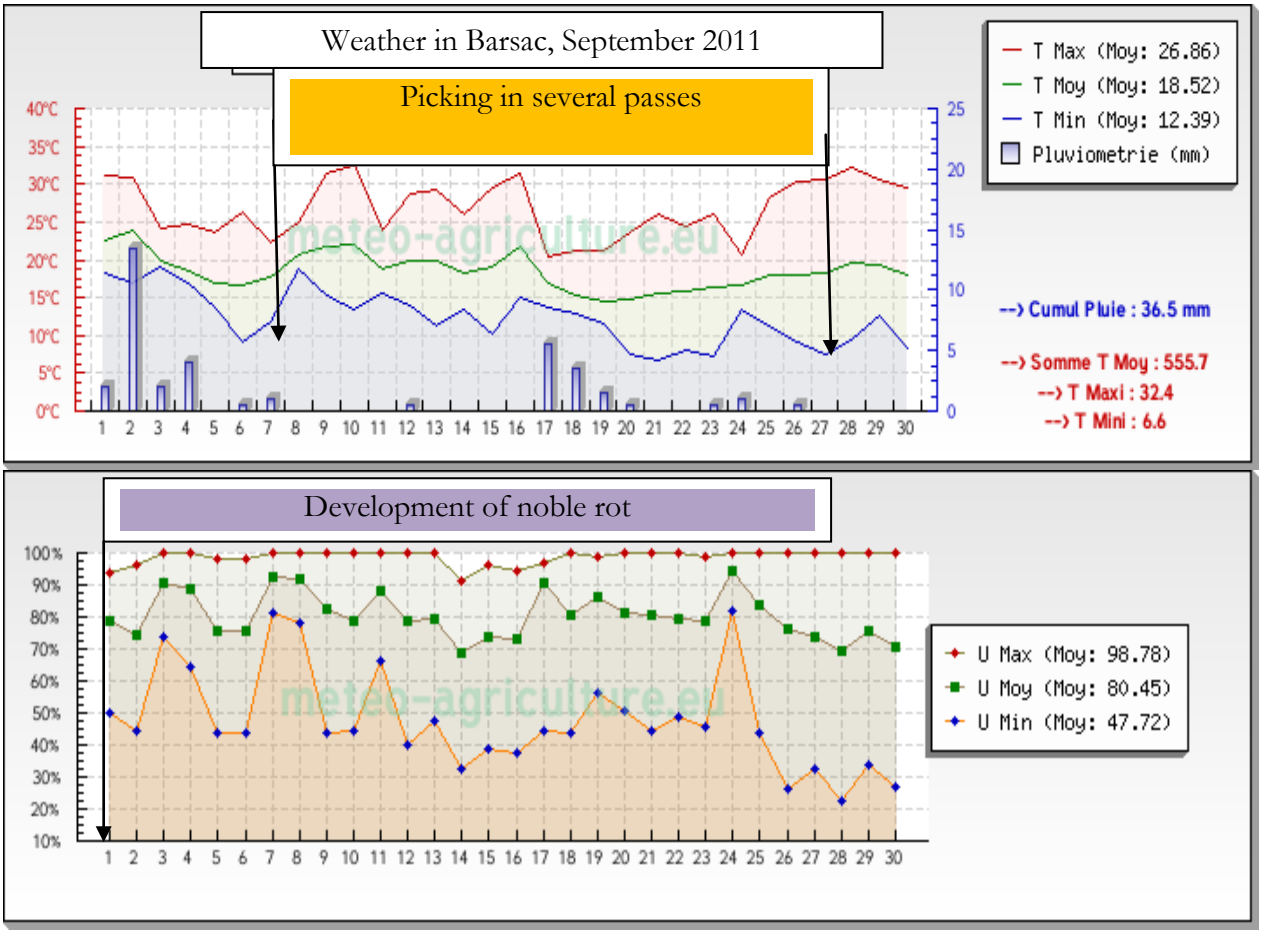

Figure 11

Daily temperature, rainfall, and humidity during the harvest in Barsac in September 2011

Astonishing dry white wines, less even quality for red wines than in 2009 or 2010, but some excellent wines, and great Sauternes and Barsac

The dry white wines have good acidity, concentration, and a long aftertaste typical of years with a cool summer.

It is more difficult to make an overall appraisal of the red wines, which are not homogeneous. Merlot wines from limestone and clay soils are deeply-coloured, profound, and beautifully fresh. Certain magnificent Cabernet Francs from the Right Bank provide a perfect counterpoint. 2011 Left Bank wines have good structure thanks to remarkable Cabernet Sauvignon, but production is unfortunately low.

The 2011 Sauternes and Barsac are great.