

The 2014 vintage in Bordeaux

Dr. Laurence GENY and Professor Denis DUBOURDIEU

*Institute of Vine and Wine Sciences
of Bordeaux University, Oenological Research Unit*

in conjunction with

E. GUITTARD*, N. DANEDE*, C. BAZ*, L. RIQUIER*, Ph. FRIAND** and Ph. PIERI***

**Institute of Vine and Wine Sciences of Bordeaux
University, Oenological Research Unit*

*** Institute of Vine and Wine Sciences of Bordeaux
University, UMR 1789 Functional Ecophysiology and Genomics of Vines, Bordeaux Sciences Agro*

*** Institute of Vine and Wine Sciences of Bordeaux
University, UMR 1789 Functional Ecophysiology and Genomics of Vines, INRA*

It is often said in Bordeaux that the image of a new vintage image when it is first offered "en primeur" depends both on the way it tastes and the expectations it creates. After a great vintage, another great vintage finds it difficult to be convincing. Likewise, after several average years, one tends to look forward to another great one. Therefore, after the challenging 2013 vintage, 2014 - which looked hopeless in late August, but ended up being more than moderately successful thanks to outstanding weather in September and October - was unquestionably much awaited.

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) and (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), If fine weather does not come until the end of ripening, it is more beneficial to the Cabernets than to Merlot.
- (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 optimum ripeness without running the risk of dilution or rot.

Due to flowering that started at the very end of May at a time when the temperatures were too cold, but which was fortunately followed by a warm, sunny period, 2014 only partially met the two first requirements mentioned above. Nor did 2014 meet the third, since a cool and relatively wet month of July did call a halt to vegetative growth before *véraison* (colour change) . After a chilly, grey, and fairly wet month of August, an exceptionally fine month of September, with warm, dry, sunny weather, enabled 2014 to partially meet the fourth requirement. As for the fifth and last, the warm, dry, bright, and summerlike, weather in October fulfilled it completely. Therefore, due to the mixed results of the weather up until late August, 2014 cannot claim to being a great vintage for red Bordeaux. Beyond all expectations, September and October saved the vintage, which ended up being good to very good, especially thanks to the Cabernets.

Successful dry white wines call for sweet fruity grapes in good condition, with sufficient acidity and skins that are not very tannic. This balance is easy to obtain on suitable terroirs if

summer is temperate and without excessive heat or drought conditions after véraison. Therefore, the cool weather in July and August 2014, and the fine weather in September were conducive to a beautiful dry white wine vintage.

Due to the number of warm, dry days in September, noble rot developed very slowly in 2014 on sweet and exceptionally acidic grapes. It only became widespread starting in mid-October. The stable, warm, dry weather in late October meant that most of the crop could be brought in under ideal conditions. 2014 is thus an excellent vintage for Sauternes and Barsac.

Early bud break after a mild, wet winter

While November and December were close to average in terms of temperature, the first three months of 2014 were mild, with above average temperatures of +2.4°C in January, +1.6°C in February, and +0.5°C in March. The winter of 2013-2014 had the lowest number of days with frost in the past 10 years. The minimum temperature went under 0°C for just 9 days (compared with the 10-year average of 26 days, and 20 days the previous winter). However, there was significant rainfall in January and February (Figure 1, Table I) – twice as much as 2013, which had seemed long and grey at the time.

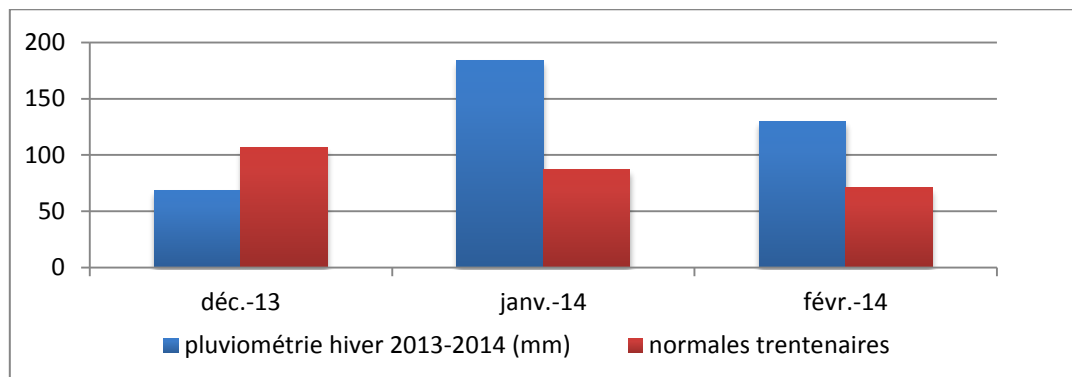


Figure 1
Cumulative winter rainfall (mm)
Data from Mérignac (Météo France)

Table I

*Weather indicators for 2014: rainfall and temperature (compared to the 1981-2010 average)
and hours of sunshine (compared with the 1991-2010 average)
Data from Mérignac (Météo France)*

	Hours of sunshine (h)		Precipitation (mm)		T°C average minimum (°C)		T°C. average maximum (°C)	
	2014	Average 1991-2010	2014	Average 1981-2010	2014	Average 1981-2010	2014	Average 1981-2010
January	68	95	181	87	6.6	3.1	12.7	10.0
February	91	115	125	71	5.7	3.3	13.1	11.7
March	181	170	88	65	5.8	5.4	16.1	15.1
April	203	182	54	78	9.2	7.4	19.4	17.3
May	204	217	71	80	10.3	11.0	19.7	21.2
June	287	239	67	62	15.4	14.1	26.3	24.5
July	243	249	51	50	16.6	15.8	26.1	26.9
August	209	241	78	56	14.8	15.7	24.7	21.7
September	265	203	22	84	14.6	12.9	26.6	24.0
October	193	147	41	93	12.2	10.4	22.7	19.4

The last days of March were warmer and more rainy. This brought on precocious bud break – about 10 days earlier than the ten-year average and nearly 3 weeks earlier than in 2013. High temperatures during bud break also led to an early start to vigorous vegetative growth in the first days of April.

With regard to rainfall, the trend was reversed in April, with less than average precipitation. In keeping with the preceding months, unseasonably warm temperatures continued, especially during the first two weeks of April (average temperature of 15°C from 1-5 April, compared with a mean of 12.3°C for that period from 2000 to 2014). However, cool temperatures in the latter half of April slowed down development considerably, and vine growth was at the stage of 5-6 unfolded leaves (comparable with 2011 at the same time period) (Figures 2 and 3). The heat summation with a base of 10°C as of the 30th of April was equal to 116 degree days, as opposed to an average of 100 from 2007 to 2013. By way of comparison, there were 80 degree days in 2013 (a late-ripening year) and 175 degree days in 2011 (an early-maturing year) as of the 30th of April.

The cold, wet weather in late April caused *filage en vrille* (in which the inflorescence was transformed into tendrils) in white wine varieties, especially in the Graves and Sauternes. This setback, combined with the small number of buds, undoubtedly accounts for the low yield of white wines in these appellations in 2014.

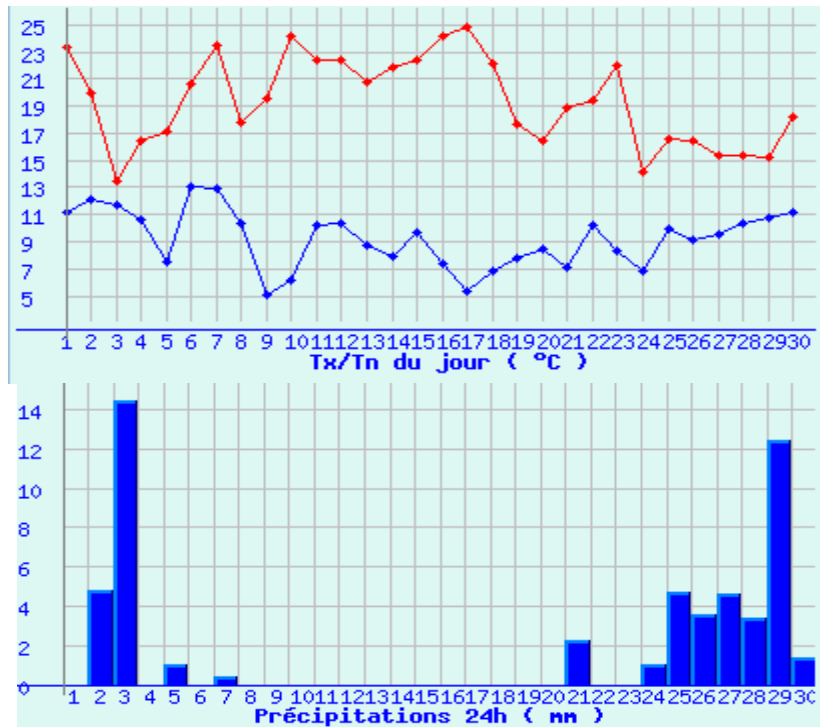


Figure 2
Daily variations in temperature and precipitation in April 2014
Data from Mérignac (Météo France)

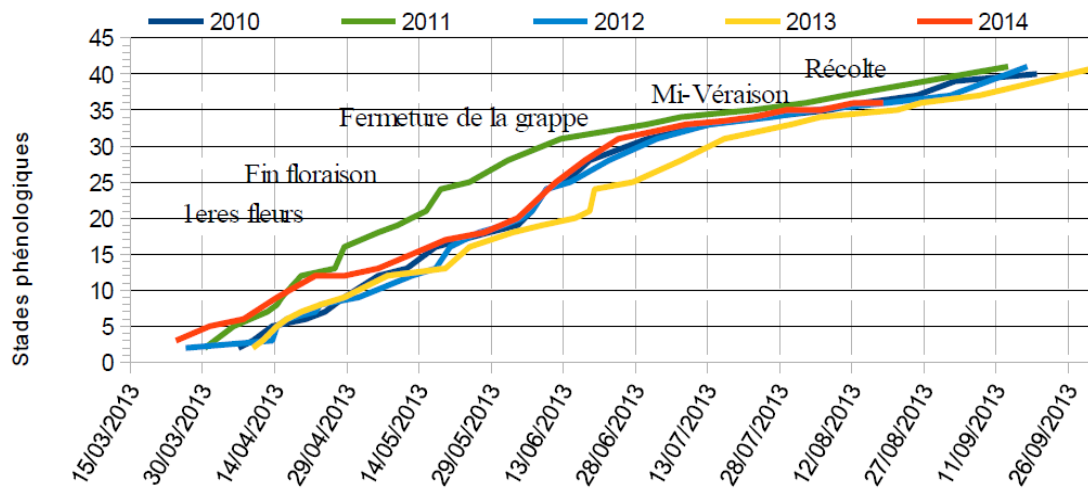


Figure 3
Development of phenological ripeness in 2014 compared with 2013, 2012, 2011, and 2010
Data from SRAL

Spring 2014: major variations in temperature accompanied by vegetative growth in fits and starts

Like the month of April, May featured an initial period with nearly average temperatures that stimulated vine growth and led to normal development, followed by a cool period that reduced growth just before flowering (Figure 4). Although the first two weeks of May were dryer than average, the second half, beginning on the 19th of May, saw violent storms with localised heavy showers (over 30mm in Listrac-Médoc), accompanied by hail. This means that even though cumulative rainfall in May was less than usual, the period just before flowering (last two weeks in May) was especially wet (up to 70% greater than average).

By this time, the head start at bud break was totally lost (Figure 3). The heat summation with a base of 10°C by the 31st of May was equal to 254 degree days, as compared with an average of 290 from 2007 to 2013, 170 for 2013 (a late-ripening year), and 430 for an early maturing year like 2011.

The first flowers appeared in late May when the cool, wet weather was unpropitious to good fertilisation and conducive to a photosynthesis deficit that caused heterogeneous flowering and significant coulure in early-maturing plots of Merlot.

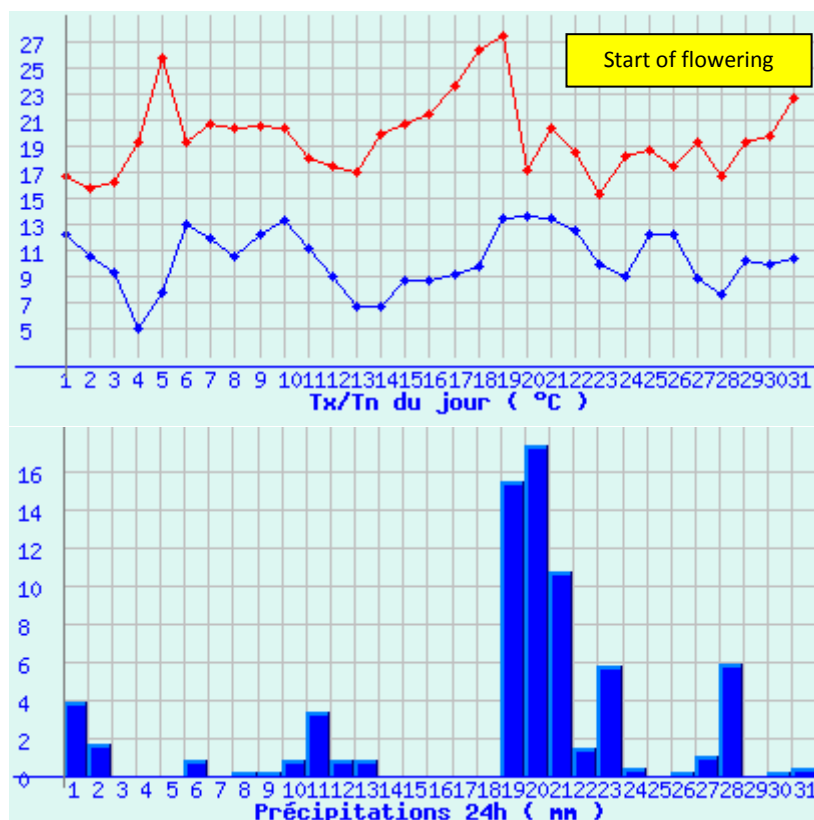


Figure 4

*Daily variations in temperature and precipitation in May 2014
Data from Mérignac (Météo France)*

An improvement in June that increased yields

Fortunately, the weather improved starting on the 4th of June, and the first two weeks of that month were dry and warm (Figure 5). This speeded up flowering and made it more regular. Merlots on late-ripening terroirs and Cabernet Sauvignon took advantage of this period to avoid a third consecutive vintage with very small yields.

Mid-flowering in our reference vineyards took place around the 7th of June, i.e. 4 days later than the 10-year average and 10 days earlier than in 2013 (Table II).

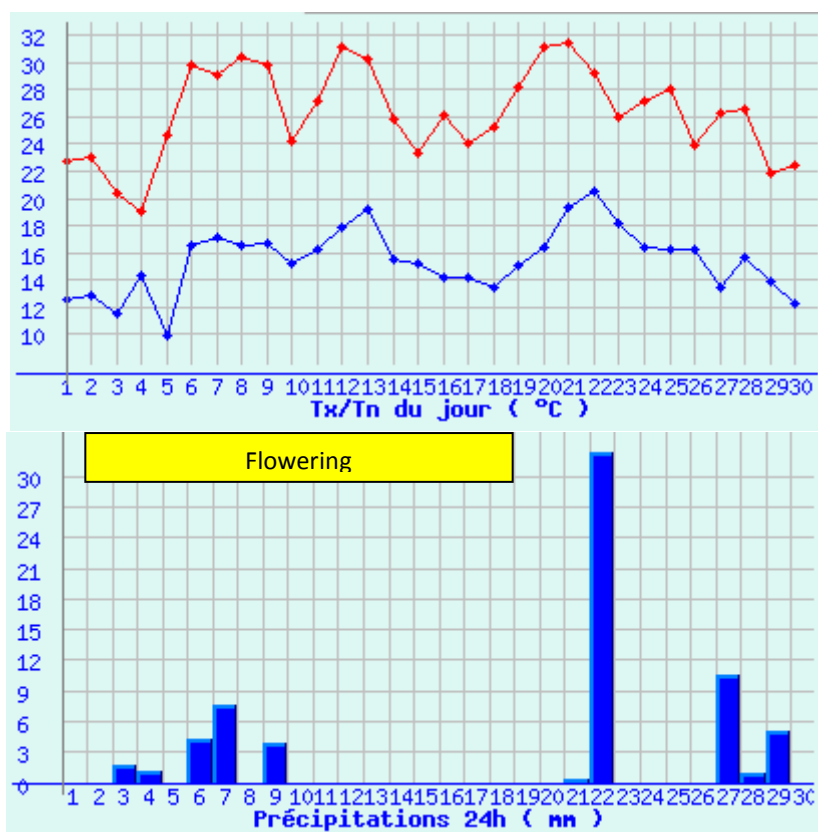


Figure 5

*Daily variations in temperature and precipitation in September 2014
Data from Mérignac (Météo France)*

It was warmer than usual at the end of the month, and the average temperature for the month of June was 1.6°C greater than the reference period (Table I). The last week in June was more rainy than usual.

The lack of water stress accompanied by mild temperatures led to very quick development of the grapes, as well as the growth of side shoots enhancing the growth of the leaf canopy and leaving the vines more sensitive to mildew and botrytis.

Table II

Mid-flowering and mid-véraison dates in 2014 compared to 2013, 2012, 2011, 2010, 2009, 2008, 2007, and the average of the last 10 years

Period	Mid-flowering	Mid-véraison
2003-2013	3 June	6 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
2011	17 May	21 July
2012	11 June	12 August
2013	18 June	22 August
2014	7 June	13 August

Thus, at this stage, the first two conditions for a good red wine vintage – flowering and fruit set that are both early and well grouped together during fine, dry weather – were only partially satisfied.

The earliest-developing plots suffered from coulure because of the cold, wet weather in late April. However, flowering in later-developing varieties went very well, and was conducive to the formation of homogeneous bunches with a sufficient number of berries.

The absence of normal summer weather in July and August precluded a stop to vegetative growth before véraison (colour change).

Summer was very much like spring. There were alternating periods close to seasonal averages, peak temperatures in July, then cool, wet weather in August. These conditions were more favourable to vegetative growth than they were to ripening the grapes.

The first two weeks of July were rather cool, with slightly under-average temperatures and frequent showers (Figure 6) that greatly increased the risk of fungal diseases. Average maximum temperatures did not exceed 21.1°C, i.e. 5.8°C less than usual despite nearly normal sunshine and rainfall. The berries continued to grow quickly, attaining bunch closure starting in mid-July.

Then the temperature pattern changed. The latter half of the month was warmer than usual, with highs in excess of 35°C, causing storms that were accompanied by hail such as occurred on the 19th and 20th of July in the Libourne region and the Entre-Deux-Mers. These storms – once again, very localised – account for disparities between terroirs. The Right Bank of the Garonne had much more rainfall than the Left Bank, especially the Northern Médoc, which received little precipitation, amounting to an advantage for that region.

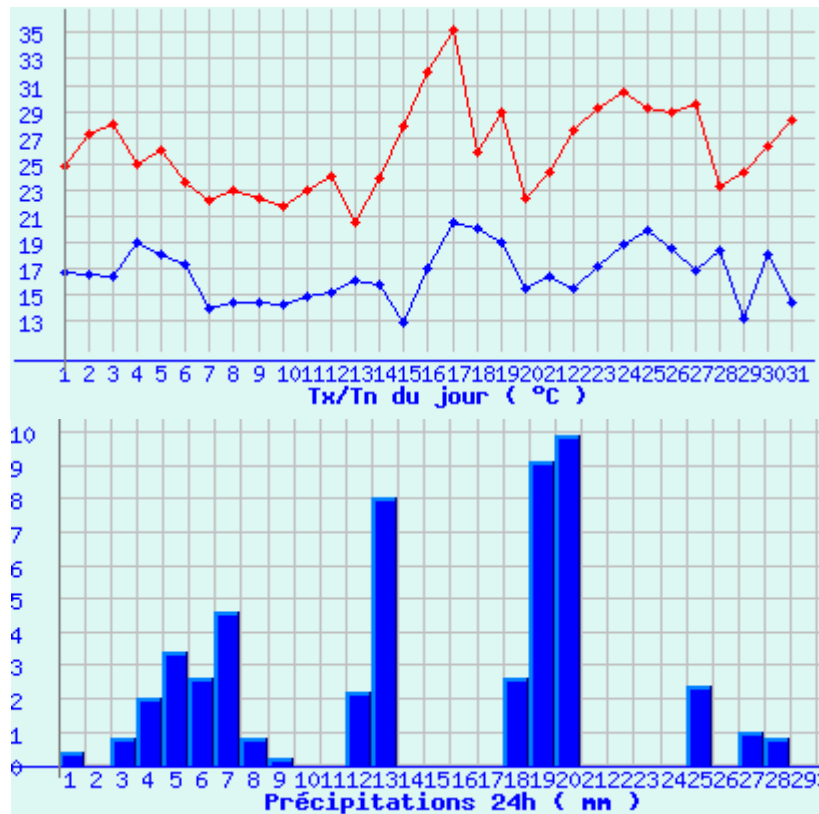


Figure 6
Daily variations in temperature and precipitation in July 2014
Data from Mérignac (Météo France)

However, this period of summerlike weather in late July did not suffice to induce enough water stress to stop vegetative growth before véraison (Figure 7). In the absence of water stress, the vine's vegetative growth continued during véraison, which began in early August in the most early-ripening and least wet plots, and continued for four weeks. Mid-véraison was reached in our reference vineyards on the 13th of August (Table II), i.e. 10 days earlier than in 2013 and 8 days later than the 10-year average (6th of August), but it was very uneven, depending on the terroir.

Due to the low variation in daytime and night-time temperatures, and the practically non-existent water stress, colour change occurred slowly and irregularly. Véraison lasted until almost the last days of August, especially in Merlot vines and at estates that had experienced frequent showers.

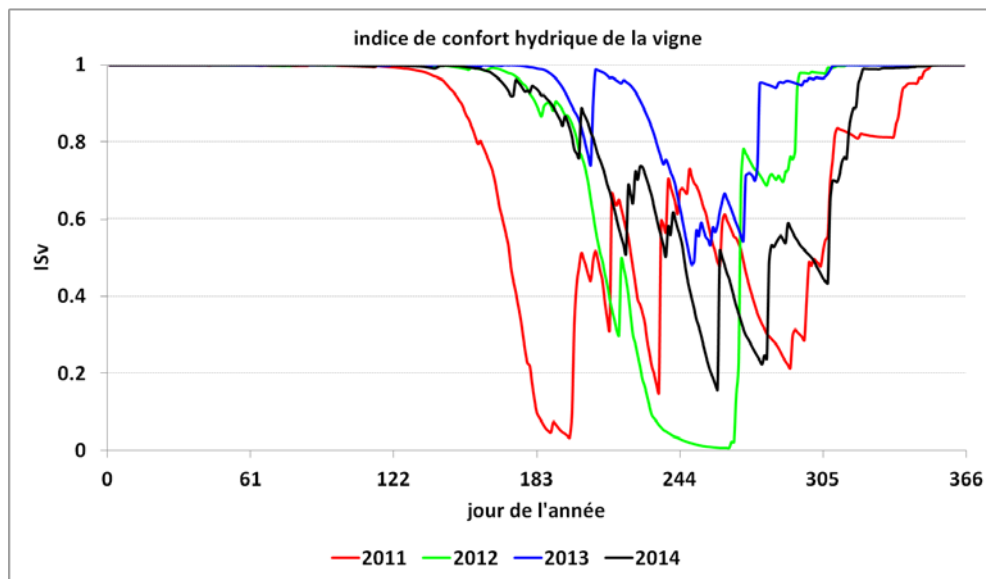


Figure 7

Variation in the water stress index in 2014 compared to 2013, 2012, and 2011.

Data from INRA (Philippe PIERI)

Therefore, a stop to vegetative growth before véraison, the third condition for a perfect red wine vintage, was not satisfied in 2014.

Frequent showers in July and August, with close-to-average or cooler temperatures, enhanced vegetative growth to the detriment of ripening. The berries were much larger in size, but changed colour slowly. Sometimes, bunches became overly compact, thereby increasing their sensitivity to pathogens.

The month of August was one of the coolest since 2000 (Table I). Colder and mostly more rainy and less sunny than in 2013 (table I), August 2014 was hardly favourable to ripening red wine grapes. The average maximum temperatures were less than 25°C, i.e. 3°C less than usual. There were no tremendously hot days (temperatures superior or equal to 30°C) at all in August 2014, and only 4 days with bright sunshine, as compared to 14 in 2013 and the seasonal average of 10. Rainfall in August 2014 was greater in Saint Emilion than in the Graves or the Médoc. However, there were major disparities in the latter region, with 82 mm in Margaux, 56 mm in Saint Julien, and 61 mm in St Estèphe. Vine leaves suffered from major attacks by mildew and grape leaf hoppers in many places. By the end of August, the situation for red wine grapes was worse than in 2013.

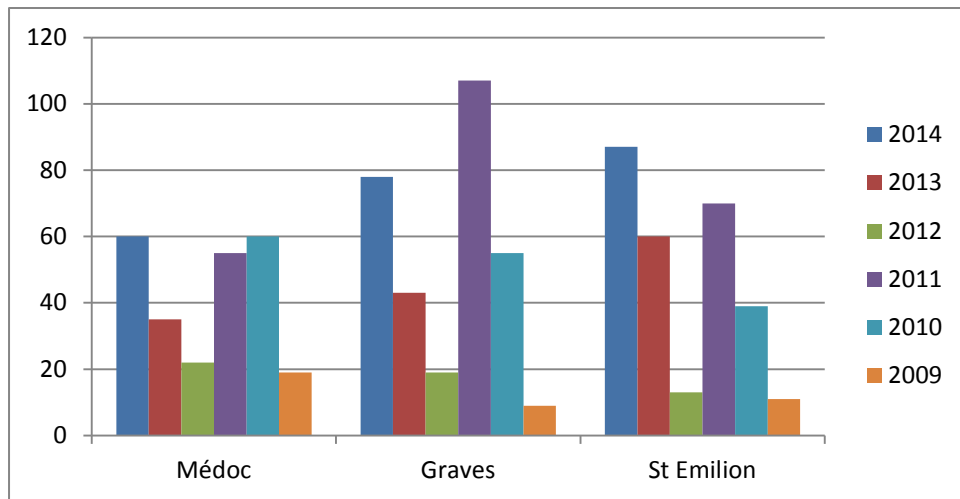


Figure 8
Breakdown of precipitation (mm) by region in August

September and October: wonderful weather that saved the day and ensured ripening

Fortunately, summer weather arrived at this point, and stayed. In fact, September and October saved the vintage *in extremis*. There was outstanding sunshine in September. In fact, this was greater than during the summer months, with temperatures more in keeping with a month of July and highs 3.8°C greater than average, with virtually no rain (just 2 days with showers on the 17th and 18th of September (Table I, Figure 9). There were 13 days with strong sunshine. Like in 2010, there were barely more than 20 mm of rain, less than a quarter of the normal amount.

Water stress finally set in, definitively stopping the growth of vine shoots and speeding up ripening. The grapes quickly finished changing colour and, despite their large size, gained in sweetness.

Paradoxically, localised major water stress was observed in the driest soils and ones that received the least rain in July such as the Northern Médoc.

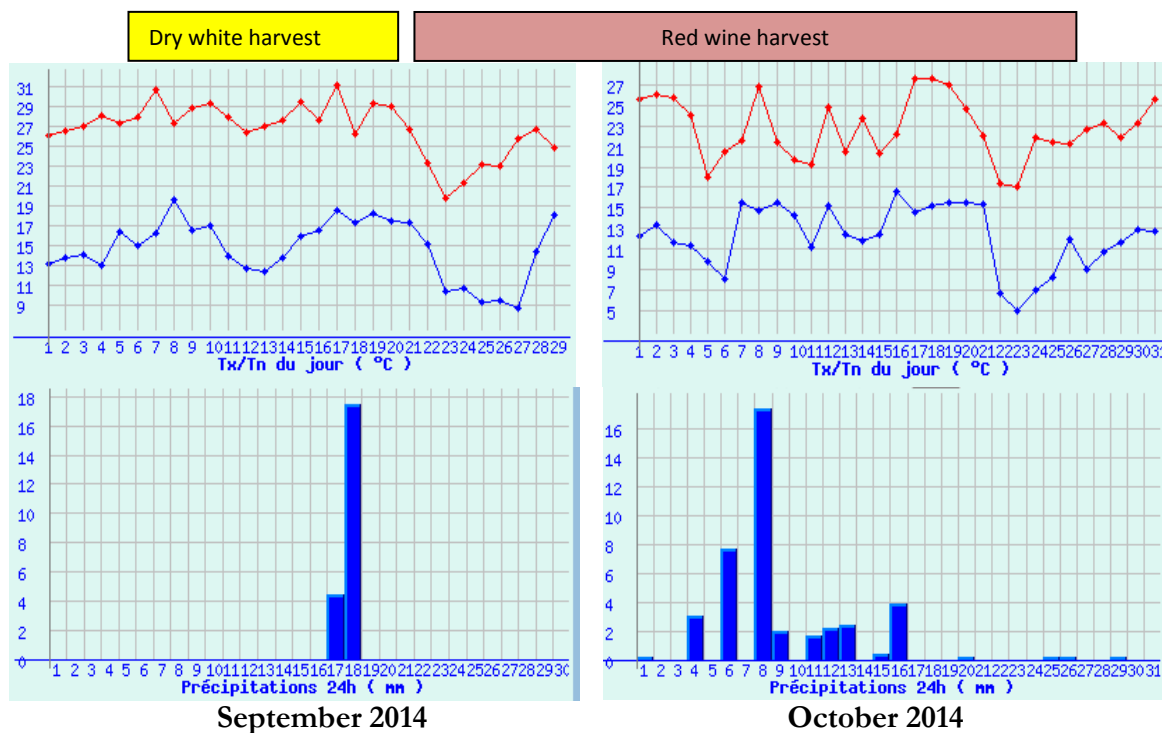


Figure 9

*Daily variations in temperature (°C) and precipitation (mm) in September and October 2014
Data from Mérignac (Météo France)*

October was very much in line with September: little rainfall and higher temperatures than usual (Table I, Figure 9), which enabled the grapes to ripen. This weather also limited attacks by botrytis if green pruning had been significant and well-adapted.

Therefore, despite a mediocre month of August, but thanks to a warm, dry, and sunny September, the fourth condition for a great red wine vintage, i.e. the complete ripening of all grape varieties, was partly satisfied in 2014. This situation was enhanced by a month of October that was just as exceptional, extending summer into autumn and ensuring a good end to ripening of the Cabernets (see below).

A relatively late harvest taking place during excellent weather for all varieties

The picking of grapes used to make dry white wines began in Graves and Pessac-Léognan at the end of the first week of September (Table VI, figure 9), i.e. a few days earlier than in 2013, 3 days later than in 2012, and 2 weeks later than in 2011. Although the state of the grapes was somewhat worrying at the start of the harvest, the warm, dry weather in September stopped the spread of botrytis. The fruit was thus in good condition and the dry white wine harvest was much less stressful than in 2013.

The 2014 Sauvignon Blanc grapes were very aromatic, with sugar levels comparable to 2013, but with much higher acidity (Table VII) and malic acid content sometimes greater than 6 g/L. Rarely practised on white Bordeaux, partial malolactic fermentation was advised for the most acidic lots. When well done, this made the wines rounder without detracting from their typicity.

Benefiting from a beautiful September, Sémillon grapes on suitable limestone or clay-limestone terroirs were sweeter than in 2013 and also featured unusually high acidity. Such a highly unusual balance, more reminiscent of Chablis or Sancerre, augur very well for an outstanding dry white wine vintage. However, the yields, especially for Sémillon, were low due to the small number of buds and cold weather during flowering.

Table III

Harvest dates for grapes in the Graves region used to make dry white wines in 2010, 2011, 2012, 2013, and 2014

	Sauvignon Blanc	Sémillon
2010	2 - 15 September	15 - 20 September
2011	22 - 31 August	1 - 5 September
2012	3 - 10 September	10 - 18 September
2013	10 - 22 September	21 - 25 September
2014	6-12 September	12-20 September

Table IV

Composition of Sauvignon Blanc grapes from a plot with limestone soil in the Graves region in 2010, 2011, 2012, 2013, and 2014

	Potential alcohol (%)	Total acidity (g/l)	pH
2010	12.6	4.6	3.15
2011	11.6	5.6	3.05
2012	12.9	5.3	3.05
2013	12.4	6.0	2.92
2014	12.4	7.6	3.05

The red wine harvest began with Merlots the last week of September, like in 2013, and continued into October. Harvesting of the Cabernets and Petit Verdot went on until just after mid-October during almost summerlike weather. Indeed, with just 40 mm of rain, compared to an average of 90 mm, October 2014 was, along with October 2011 and October 2009, one of the driest in the past 10 years (Figure 10). It was also remarkably warm, with several daytime maximums in excess of 27°C on the 17th, 18th, and 19th (figure 9). The average maximum temperature (22.7°C) was 2.3°C above average (Table I)

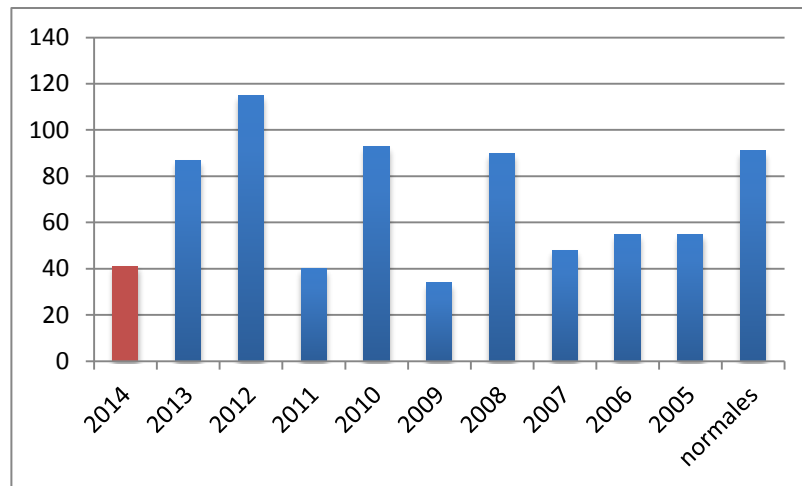


Figure 10

*Precipitation (mm) in the month of October in Bordeaux since 2005
Data from Mérignac (Météo France)*

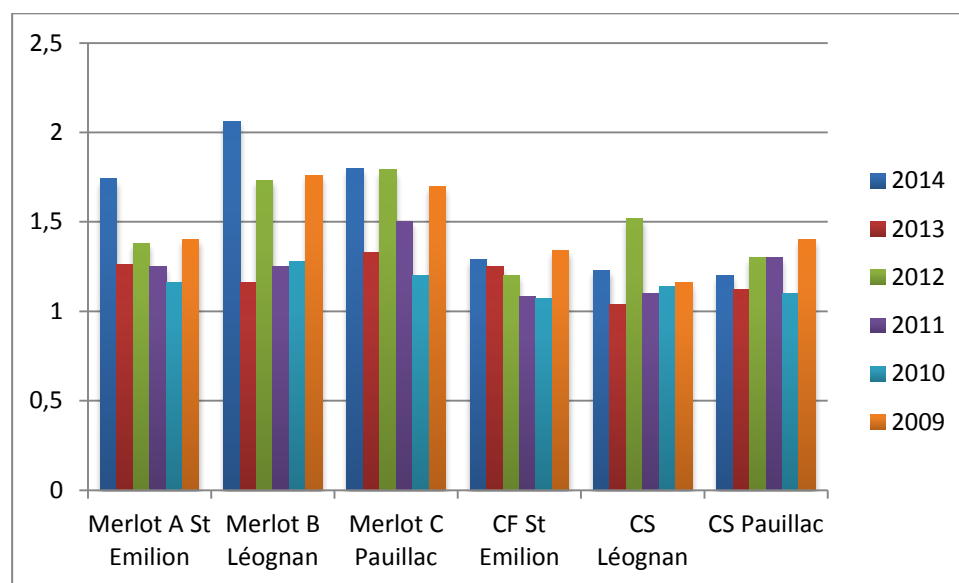
Obviously, the fifth and final condition for a good red wine vintage - fine weather during the harvest - was perfectly met in 2014.

The size of the berries is one of the main characteristics of the vintage (Table V, Figure 11). At harvest time, the Merlot berries weighed more than in the 5 previous vintages (as much as 2 grams was not rare in 2014) whereas the weight of Cabernet grapes were very close to average. The absence of water stress at fruit set partially explains this characteristic of the 2014 vintage.

This phenomenon had no major consequences on sugar levels, which were quite comparable to previous vintages, and higher than in 2013. Another hallmark of 2014 is much higher acidity (both total and malic) of the red wine grapes - the logical result of a cool summer (Table V).

Table V*Variations in grape sugar content and acidity during ripening*

	Weight per 100 berries (g)	Sugars (g/l)	TA (g/L H ₂ SO ₄)
2014			
8/9 Merlot	185	197	6
Cabernet Sauvignon	141	190	6
21/9 Merlot	184	229	4.1
28/9 Cabernet Sauvignon	142	223	5
2013			
10/9 Merlot	118	207	5.2
Cabernet sauvignon	100	188	6.8
30/9 Merlot	118	219	4
Cabernet sauvignon	119	215	3.5
2012			
3/9 Merlot	155	203	4.3
Cabernet sauvignon	149	178	5.7
24/9 Merlot	113	249	2.4
Cabernet sauvignon	130	226	3.5

**Figure 11**

Average weight (g) of a berry in the 2014 vintage, compared with the 5 previous vintages for Merlot, Cabernet Franc (CF), and Cabernet sauvignon (CS) in various plots of great growth vineyards.

Alternating cool nights and warm daytime temperatures were conducive to a satisfactory synthesis of anthocyanins. The Cabernets took greater advantage of the situation than Merlot. Total anthocyanin content in Merlot and the Cabernets in our reference vineyards, although variable depending on location, was always lower than in 2010, a vintage with remarkably deep colour, but greater than in 2009 (Figure 12).

The fine weather in September and October, however, was not enough to totally break down certain herbaceous notes in all vineyards. Conditions starting in early summer were very favourable to the synthesis of pyrazines, however their degrading was sometimes incomplete in plots that were nitrogen-rich, had undergone insufficient removal of side shoots, or were poorly drained.

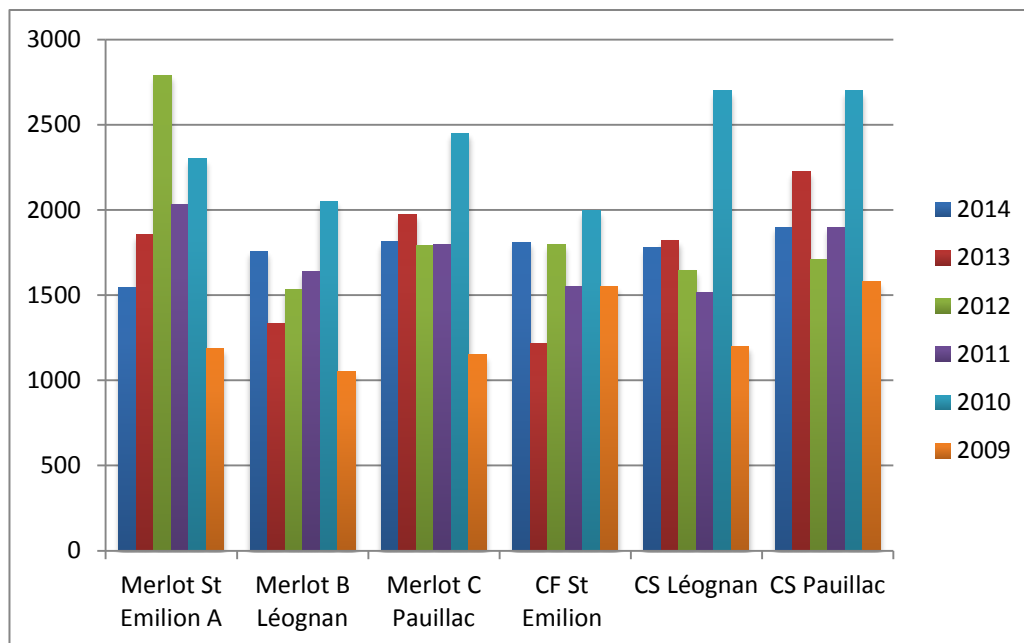


Figure 12

Total anthocyanin content (mg/L) of Merlot, Cabernet Franc (CF), and Cabernet Sauvignon (CS) berries in 2014, 13, 12, 11, 10, and 09 in plots of classified growth vineyards

In Sauternes and Barsac (figure 13), the warm, dry weather in September delayed the spread of noble rot. The first pass in late September only brought in a small number of botrytised grapes. It was thus necessary to wait, but patience was richly rewarded. The development of *Botrytis cinerea* really only became widespread starting in the second week of October thanks to light showers on the 8th and 9th of that month. Warm afternoons with highs of nearly 30°C from the 17th to the 20th of October were extremely favourable to "roasted berries", the best kind of noble rot. Most of the crop was picked in the latter half of October when the weather was just perfect: foggy in the morning and mild in the afternoon, with no rain whatsoever. The window of opportunity for picking was open exceptionally wide.

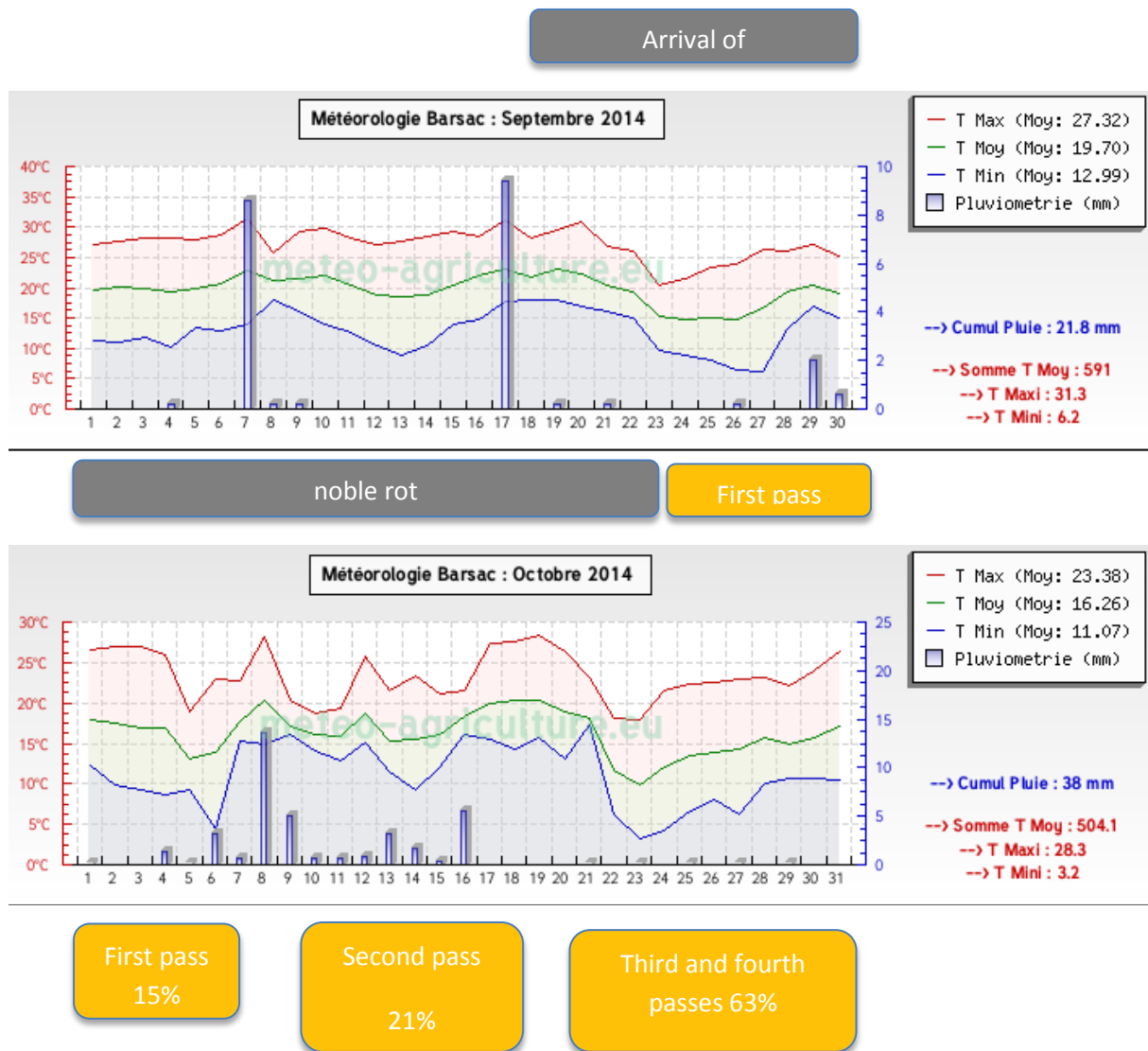


Figure 13
*Daytime temperatures and precipitation in September and October 2014 in Barsac
Chronology of the development of noble rot and progression of passes (example).*

Excellent dry white and sweet white wines and successful reds, especially thanks to the Cabernets

The 2014 dry white wines are excellent. Fruity, concentrated, and underpinned by a very unusual sort of acidity for Bordeaux, they undoubtedly have good ageing potential.

The great sweet white wines are also superb, but production was unfortunately very low, with frequent yields of less than 10 hectolitres per hectare.

The 2014 red wines are unquestionably better than 2013s. The Merlot wines are fairly deep in colour, as well as fruity, tasty, relatively full-bodied, and well-structured depending on the terroir. As is often the case, clay soils gave the finest results. The quality of the vintage is nowhere

more obvious than with the Cabernets, both Franc and Sauvignon, which took full advantage of the Indian summer. Displaying a satisfactory colour, the wines are elegant, complex, and more concentrated than Merlot. Everyone will inevitably try to come up with a vintage 2014 can be compared with. However, it is surely too early to tell at this stage.