

# The 2006 vintage

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It was necessary to wait until the first tastings in February, just prior to blending, before forming a serious opinion of the 2006 vintage. This year was marked by sharp contrasts of weather, alternating between very high temperatures (July and September) and very low ones (August). Furthermore, a stormy period in mid-September that was very intense in certain locations gave rise to fears of rot. Is the 2006 vintage, which was harvested in a rush, disappointing or, on the contrary, very successful? It is only normal to ask this question seeing as spring and summer were, on the whole, dry and warm, and the grapes were, after all, very ripe.

Before taking a closer look at the effect of weather on vine growth and grape composition in 2006, let us go over the main influences affecting quality in Bordeaux.

The success of a vintage for red wines depends on five factors:

- 1) Quick, early flowering that paves the way for even *véraison* (colour change) and ripening
- 2) Early onset of water deficit that limits the size of the grapes and predisposes them to high tannin content at an early stage.
- 3) A clear and definitive stop to shoot growth prior to *véraison* brought on by major water deficit in July.
- 4) Moderate dryness and heat during the ripening period, while maintaining sufficient (but not excessive) water deficit to encourage the production of sugar, colour, and aromas.
- 5) Mild weather with little rainfall during the harvest enabling pickers to wait for optimum maturity in late-ripening plots and grape varieties, without fear of dilution or rot.

A great dry white wine vintage calls for reduced water deficit after *véraison*, temperate daytime temperatures and cool nights during ripening, to promote aromas and retain acidity in the grapes.

As for great sweet white wines, the development of noble rot also necessitates alternating damp periods (propitious to the spread of *Botrytis cinerea*) and warm, dry weather conducive to concentrating the grapes.

## Cool weather in the early part of the year causing late bud burst

Precipitation during the winter of 2006 was greater than average (652 mm from October to March, as compared to an average of 534 mm between 1976 and 2005) and March 2006 was the wettest month in 30 years. This built up water reserves in the soil after the drought conditions of 2005. However, rainfall varied from region to region, and was much less plentiful in the Sauternes appellation and the eastern part of the Entre-Deux-Mers. The end of the winter season was cold (Chart I), marked by numerous frosts in late February and early March. Despite significantly milder weather in late March, the slow warming of the atmosphere and soil led to slightly delayed burst, as in 2005 (around the 6<sup>th</sup> of April for Merlot and the 14<sup>th</sup> of April for Cabernet Sauvignon). Frosts occurred on the 8<sup>th</sup> and 11<sup>th</sup> of April, causing damage in certain plots in the Pessac-Léognan appellation.

**Chart I**

*Average temperatures during the three first months of the year and the date of the last frost of the year since 1991. Data from La Grande Ferrade (INRA – Villenave d’Ornon)*

	Average temperature (January-March, °C)	Date of the last frost		Average temperature (January-March)	Date of the last frost
<b>1991</b>	9.1	21 April*	<b>1999</b>	8.7	15 February
<b>1992</b>	6.8	24 February	<b>2000</b>	8.3	6 March
<b>1993</b>	8.2	27 March	<b>2001</b>	9.8	26 February
<b>1994</b>	9.4	17 February	<b>2002</b>	9.8	19 February
<b>1995</b>	8.8	28 March	<b>2003</b>	8.2	19 February
<b>1996</b>	8.5	4 April	<b>2004</b>	7.9	24 March
<b>1997</b>	9.4	16 February	<b>2005</b>	7.2	13 March
<b>1998</b>	9.5	25 March	<b>2006</b>	7.3	11 April

\*The frost of 21 April 1991 was very hard and destroyed a large number of young shoots. This inevitably led to exceptionally low yields.

## A dry spring and good weather during the flowering

Spring rainfall was much lower than usual. The weather station at La Grande Ferrade in Villenave d’Ornon recorded 23 mm precipitation in April, or just 40% of the 30-year average (1976-2005). Temperatures were close to average.

Isolated storms in May resulted in an uneven distribution of rainfall. The northern Médoc and Sauternes had slightly more precipitation than usual, whereas the rest of the Gironde department had about 30% less than average. Temperatures were relatively high, which tended to speed up vine growth.

The month of June was very dry and relatively warm. Rain in the northern part of Bordeaux did not exceed 10 mm. Temperatures were slightly higher than the 10-year average (1996-2005, Chart II) – itself significantly higher than in previous decades.

The vines thus quickly made up for the delay caused by cool spring weather. Flowering went quickly and well, without any *coulure* (shot berries), on both the right and left banks. The Merlot vines started to flower in late May and Cabernet in early June. Peak flowering occurred in our red wine reference vineyards on about the 4<sup>th</sup> of June (1<sup>st</sup> of June for Merlot and 6<sup>th</sup> of June for Cabernet). These dates, close to the most recent ten-year average

(Chart III), were earlier than the thirty-year average (1976-2005). The dry, very sunny weather was ideal for fertilization.

### Chart II

*2006 weather statistics compared to the most recent ten-year average (1996-2005). Data from La Grande Ferrade (INRA – Villenave d’Ornon)*

	Duration of sunshine (in hours)		Rainfall (mm)		PET (mm)		Average temperature (° C)	
	<b>2006</b>	1996-2005	<b>2006</b>	1996-2005	<b>2006</b>	1996-2005	<b>2006</b>	1996-2005
<b>January</b>	<b>92</b>	94	<b>58</b>	84	<b>15</b>	22	<b>6</b>	7
<b>February</b>	<b>118</b>	110	<b>95</b>	71	<b>27</b>	33	<b>5</b>	8
<b>March</b>	<b>138</b>	187	<b>197</b>	57	<b>58</b>	67	<b>11</b>	11
<b>April</b>	<b>217</b>	191	<b>36</b>	97	<b>91</b>	88	<b>13</b>	13
<b>May</b>	<b>251</b>	234	<b>60</b>	77	<b>125</b>	120	<b>17</b>	17
<b>June</b>	<b>308</b>	258	<b>23</b>	62	<b>162</b>	140	<b>21</b>	20
<b>July</b>	<b>284</b>	265	<b>59</b>	56	<b>166</b>	143	<b>25</b>	21
<b>August</b>	<b>238</b>	247	<b>72</b>	70	<b>126</b>	128	<b>20</b>	22
<b>September</b>	<b>212</b>	211	<b>87</b>	79	<b>92</b>	85	<b>21</b>	19
<b>October</b>	<b>159</b>	152	<b>61</b>	102	<b>55</b>	49	<b>18</b>	15

\* Potential evapotranspiration corresponds to the amount of water that evaporates into the atmosphere from soil saturated with water and covered with grass. This index shows the water lost by the soil through evaporation and transpiration from vegetation.

### Chart III

*Comparison of peak flowering dates and peak véraison dates in 2006 compared to 2005 and the most recent 10-year average.*

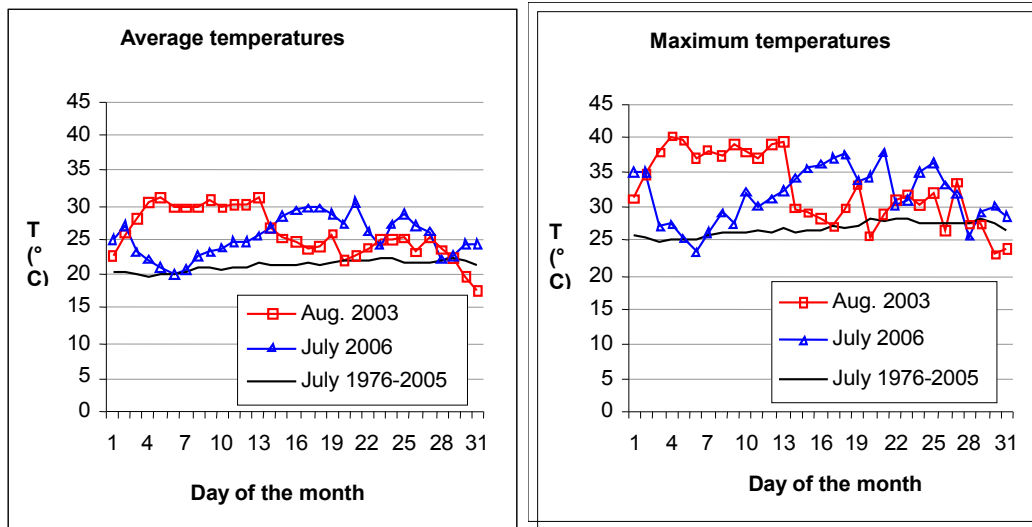
<b>Period</b>	<b>Peak flowering</b>	<b>Peak véraison (colour change)</b>
1995-2004	2 June	12 August
2005	30 May	3 August
2006	4 June	6 August

## **A very hot month of July that brought vine growth to a halt before an early start to véraison**

The water deficit in early July was slightly greater than in 2005. This persisted throughout the month of July, despite several storms between the 15<sup>th</sup> and the 18<sup>th</sup> of that month. Rainfall was heterogeneous, with one and a half times the average rainfall in the northern Médoc, Blaye, and Libourne regions. July 2006 was also exceptionally hot. However, the heat wave in the second ten-day period in July was shorter and less intense than that of August 2003 (Figure 1).

This weather accelerated the growth cycle to the point where vegetative growth was arrested and véraison brought on earlier than usual. The first grapes changed colour on the 23<sup>rd</sup> of July in the earliest-maturing plots of Merlot.

Thus, by the end of July, three of the five conditions for a successful red wine vintage in Bordeaux had been combined: quick, early flowering, warm weather during fruit set, and a stop to vegetative growth just prior to véraison.



**Figure 1:**

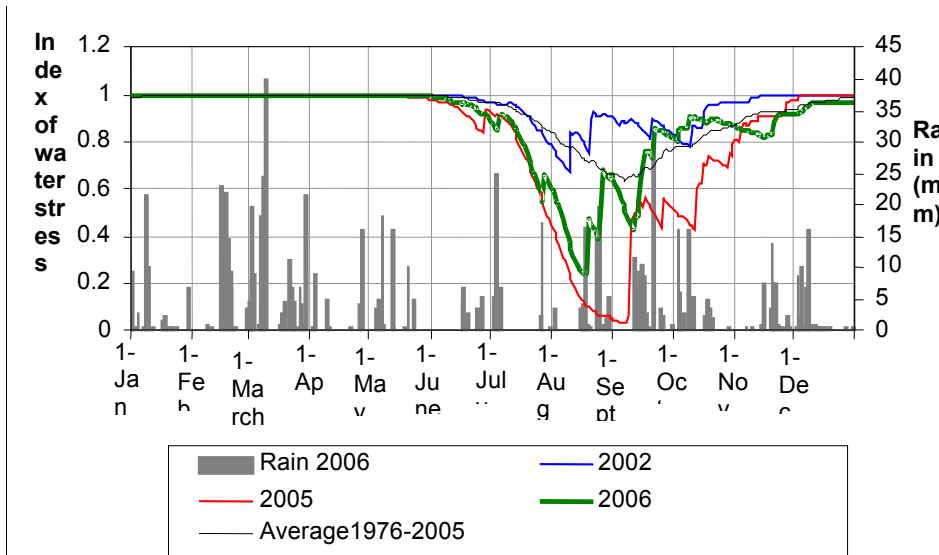
*Comparison of average and maximum daily temperatures in July 2006 and August 2003*

While the daily averages in July 2006 were close to those of August 2003, maximum temperatures were often lower, and never reached the 40°C maximum of the 2003 heat wave.

**Cool weather and overcast skies in August meant that *véraison* (colour change) was very spread out, but also helped white wine grapes retain freshness and aroma.**

August weather slowed the beginning of ripening. There was less sunshine than in the previous two months and temperatures dropped below seasonal averages (this was the coolest August since 1986, which was nevertheless a great vintage). The abnormally cool temperatures slowed down *véraison*, which had started early. Peak *véraison* in our reference vineyards took place on about the 4<sup>th</sup> of August for Merlot and the 9<sup>th</sup> of August for Cabernet Sauvignon. This was 6 days earlier than the ten-year average and only slightly (3 days) behind 2005 (Chart III). However, there were significant differences from one plot to another. *Véraison* in certain Cabernet vines grapes dragged on, prompting winegrowers to remove under-ripe bunches by "green harvesting".

Despite often cloudy weather, the water deficit remained stable during *véraison* and was markedly greater than in 2002 (Figure 2). This encouraged the production of phenolic compounds in red wine grapes. The cool temperatures in August had the positive effect of storing water in the soil after the July heat wave and also enhanced the grapes' aromatic properties, especially for white wine varieties which are more sensitive to excessive heat after *véraison*.

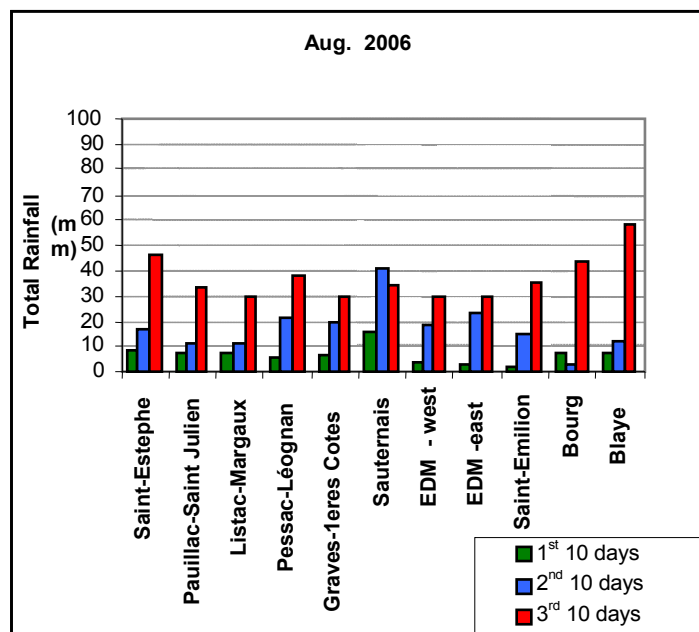


**Figure 2**

*Graph showing water stress of vines (water stress index\*) in Bordeaux in 2002, 2005, and 2006.*

\*The water stress index decreases as the water deficit increases. A value of 1 indicates that the vine is not subject to any water stress. Good vintages are often associated with an index below 0.5: the vine is said to experience "moderate stress" in such cases.

Several showers in late August gave a slight impetus to vegetative growth (Figure 3). Precipitation was decidedly above the seasonal average in the northern Médoc (70 mm), Sauternes (90 mm), and the St. André de Cubzac area (80 mm). The Saint-Estèphe, Blaye, and Bourg areas also received over 40 mm precipitation due to a storm on 24/08.



**Figure 3**

*Breakdown of precipitation in August 2006 in the Bordeaux vineyards*

**Propitious ripening weather in the first and last ten days of September.**

It did not rain during the first ten days of September and temperatures were quite high. It was, thus, possible to harvest white wine grapes in early-ripening plots before the showers in the second ten-day period of September. These Sauvignon Blanc and Sémillon grapes had a fairly high sugar content, balanced by good acidity, and a complex, fruity intensity, thanks to the cool weather in August. Grapes picked in later-ripening areas suffered from the rain in mid September.

Early September was warm and dry, which boosted the ripening of red wine grapes that had slowed down in August. By the end of August, sugar levels were one week behind the most recent ten-year average. However, by the 11th of September they had caught up and were quite close to values for the 2005 and 2003 vintages. On the other hand, total acidity was higher (close to 1990 one week before the harvest). This provided the 2006 red wines with a beautiful balance between sugar and acidity (Chart IV).

**Chart IV**  
*Development of sugar and acidity levels in grapes  
during the last month of ripening*

	Sugar (g/l)	TA (g/l H <sub>2</sub> SO <sub>4</sub> )
<b>2006</b>		
28/8 Merlot	198	4
Cabernet Sauvignon	175	6.2
1/9 Merlot	249	3.1
Cabernet Sauvignon	228	4.9
<b>2005</b>		
29/8 Merlot	224	3.2
Cabernet sauvignon	197	4.9
12/9 Merlot	243	2.7
Cabernet sauvignon	219	4.1
<b>2004</b>		
30/8 Merlot	167	6.1
Cabernet Sauvignon	138	6.8
13/9 Merlot	208	3.4
Cabernet Sauvignon	190	3.9
<b>2003</b>		
5/9 Merlot	238	2.5
20/9 Cabernet Sauvignon	220	3.2
<b>1990</b>		
15/9 Merlot	222	3.2
28/9 Cabernet Sauvignon	199	3.7

The beautiful weather in early September encouraged good maturity in early-ripening plots. The high temperatures were also conducive to the accumulation of anthocyanins (Chart VI). The sugar levels, balance provided by excellent acidity, and remarkable phenolic concentration one week before the harvest boded extremely well for the vintage. (Chart V).

**Chart V**  
*Balance in grapes at harvest time in various vintages*  
Averages in reference vineyards in the last sample taken before the harvest  
(M: Merlot ; CS: Cabernet Sauvignon)

	Weight per 100 grapes	Sugar (g/l)	TA (g/l H <sub>2</sub> SO <sub>4</sub> )
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	<b>M</b>	<b>CS</b>	<b>M</b>	<b>CS</b>	<b>M</b>	<b>CS</b>
2000	173	147	245	220	3.5	3.8
2001	182	143	225	202	3.5	4.5
2003	145	118	238	222	2.5	3.3
2004	165	136	223	201	3.4	4.2
2005	124	112	244	222	2.9	4.2
<b>2006</b>	<b>136</b>	<b>124</b>	<b>249</b>	<b>201</b>	<b>3.1</b>	<b>4.4</b>

**Chart VI**

*Phenolic characteristics (Glories method)\* of grapes in our reference vineyards in the last sample taken before the harvest*

	<b>A1 (mg/l)</b>	<b>PEA (%)</b>	<b>TPC</b>
<b>Médoc</b>			
Merlot	1305	69	51
Cabernet sauvignon	2075	47	51
<b>Graves</b>			
Merlot	2533	45	46
Cabernet sauvignon	2151	41	44
<b>Libourne region</b>			
Merlot	2227	58	52
Cabernet sauvignon	2716	38	56
<b>Entre-Deux-Mers</b>			
Merlot	1771	62	74
Cabernet sauvignon	2184	35	43
<b>Right Bank</b>			
Merlot	1750	49	62
Cabernet sauvignon	2156	35	49

\*A1 corresponds to the amount of Total Anthocyanins extracted at pH1. This index represents the total anthocyanin potential and depends on the synthesis and accumulation of pigments.

\* PEA (%) is the Proportion of Extractible Anthocyanins. PEA (%) increases during ripening, varying from 35 to 70%, and corresponds to the following ratio: (Extractible Anthocyanins / Total Anthocyanins)\* 100.

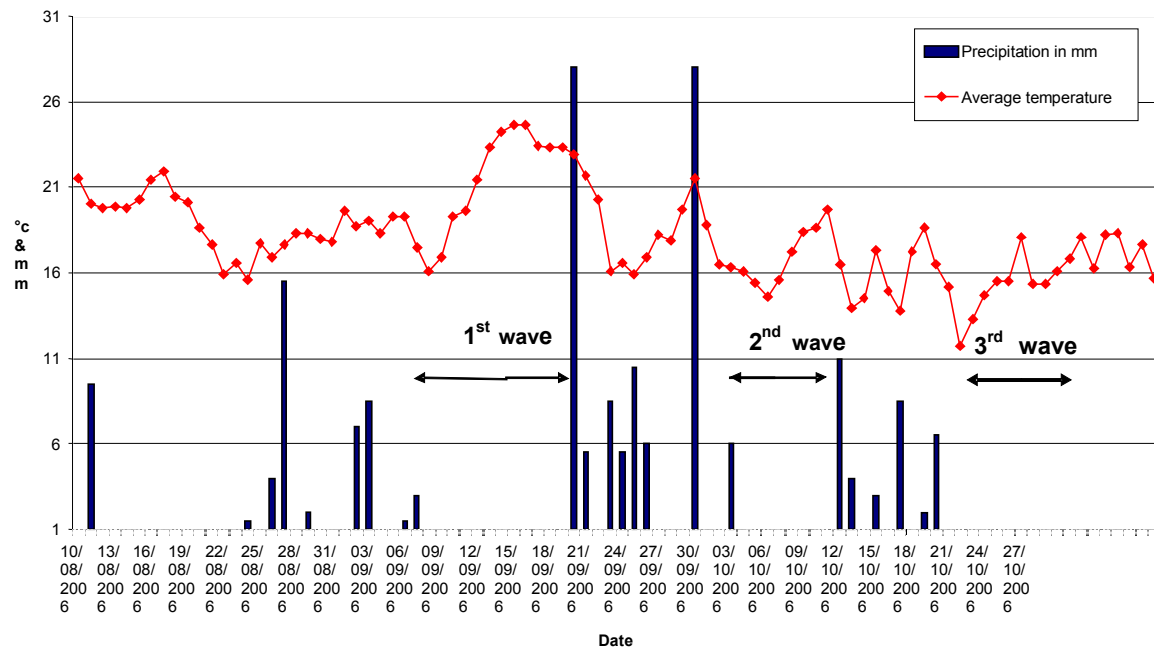
\* TPC corresponds to the Total Phenolic Content.

There were heavy rainstorms during the second ten-day period in September. However, precipitation levels varied greatly, from 100 to 150 mm. The Pessac Léognan appellation suffered least from the rainfall. Without this rain, 2006, which was already perfect for white wines, would have certainly been the same for red wines.

The vintage outlook was thus completely changed by these storms. The risk of dilution and grey rot prompted winegrowers to pick more quickly than they would have imagined in early September. Picking started in the earliest-maturing Merlot grapes on the 12<sup>th</sup> of September. The last ten days of that month were fortunately warm and there was no significant precipitation after the 22<sup>nd</sup>. Most of the Cabernet grapes finished ripening and were harvested by the end of the month. There were showers nearly every day in the first week of October, which increased fears of rot and motivated winegrowers to pick the latest-ripening grapes urgently. While a late harvest for Cabernet is generally considered a recipe for success in Bordeaux, this was not the case in 2006.

However, on relatively early-ripening plots and at estates with carefully-managed vineyards (moderate yields, tilled soil, leaf thinning, and green harvesting), the composition of grapes at harvest time was remarkable for all grape varieties: especially high concentrations of sugar and phenolic compounds, low acidity, and remarkable fruitiness. The berries were nevertheless somewhat larger than the exceptionally small ones in 2005. Merlot grapes from clay soils and Cabernet grapes from fine gravelly soils fared better in 2006 than grapes grown on sandy or silty soils. The early maturity in 2006 was also advantageous to Petit Verdot.

In Sauternes, alternating wet periods and fairly long hot, dry periods were perfectly conducive to the development of noble rot, which worked its wonders with impressive efficiency to concentrate sugar while maintaining acidity and fruit. The right timing for each wave of picking (figure 6) and a rigorous selection during harvesting resulted in lower yields than in 2005. However, the grapes combined the concentration, good acidity, and aromatic complexity typical of a great vintage for sweet white Bordeaux. The 2006 vintage was particularly successful on clay soils in Sauternes and limestone in Barsac.



**Figure 6**  
Average duration of various waves of picking in Sauternes in 2006 and corresponding weather conditions

**Aromatic dry white wines typical of their appellations, successful great red wines, and excellent Sauternes.**



While picking in the red wine appellations and Sauternes was more complicated than in 2005, fermentation for all types of wine went very smoothly.

As the extremely healthy grapes at harvest time led one to expect, the dry white Bordeaux were very aromatic, mineral, fruity, concentrated, and elegant. They were perhaps superior to 2005 and comparable to 1996. They definitely have good ageing potential.

At the beginning of barrel ageing, we were able to obtain a much clearer idea of the potential for the great red Bordeaux wines. They were deep-coloured, with an intense, complex, fresh fruit bouquet. Furthermore, despite our fears during the harvest, the Cabernets are very successful. The best Merlot, made from grapes grown on clay and limestone soils, are especially aromatic and have beautiful tannic structure without astringency. The 2006 red wines will undoubtedly be long-lived. However, they appear more heterogeneous, in the early stages of barrel ageing, than the 2005s at the same time of year. Their ultimate quality will thus depend on their *terroir*, careful vineyard management, winemaking expertise, and strict selection of the finest vats.

Sauternes provided the vintage's greatest surprise. We knew these wines were rich from the very beginning, but tasting after blending revealed that the best wines also displayed the purity, elegance, and complexity of the greatest vintages.