

The 2008 vintage



Laurence GENY*, Bernard DONECHE*, and Denis DUBOURDIEU

Bordeaux Faculty of Oenology, Victor Segalen Bordeaux 2 University

Bordeaux Institute of Vineyard and Wine Sciences



in conjunction with:

E. GUITTARD, N. DANEDE, G. de REVEL, L. RIQUIER,
K. VAN LEEUWEN and P. FRIAND.

The quality of Bordeaux vintages is determined by several key factors that should be taken into account before analysing the specific weather of a given year, its impact on grape composition, and the character of the resulting wines.

To produce a "*perfect vintage*" for red wine, the growing season must meet five conditions (in order):

- 1- Early, rapid flowering to promote good fertilisation, ensure satisfactory yields, and facilitate even ripening.
- 2- A slight water stress during fruit-set to enhance their future tannin content and prevent the young grapes from growing too big.
- 3- Severe water stress just before colour-change to stop vine growth completely.
- 4- Optimum leaf function up to harvest time, without significant resumption of vine growth, to ensure that the grapes ripen completely.
- 5- Good weather during the harvest, making it possible to wait for late-ripening plots and late-maturing grape varieties to reach their peak without any risk of dilution or rot.

The first two conditions require a relatively warm spring without too much rain.

The third is absolutely decisive for a good vintage. For vine growth to stop before colour change, weather during the month of July must be sufficiently dry, the soil must have low water reserves, and there should be a large leaf canopy to ensure a high evapotranspiration rate.

To meet the fourth condition, the weather must be moderately hot in August and early September, with just enough rain for photosynthesis to continue without any significant new shoot growth.

Finally, ideal weather during the grape harvest – cool nights and warm days – depends on the stability of the Azores anticyclone in September and October, which protects the Gironde from major Atlantic depressions.

The rarity of outstanding vintages is due to the difficulty of combining all these conditions in an intrinsically unstable oceanic climate. 2005, 2006, and 2007 provide perfect illustrations of the impact of these five conditions. In 2005, all the conditions were present, and meshed perfectly. The first three were present in 2006, resulting in a very good vintage. The 2007 vintage met only the fifth condition, which saved it from disaster and produced creditable wines.

The first two conditions were certainly not met in 2008, with wet, overcast weather from March to mid-June, accompanied by frost in early April in many places. This led to late, uneven flowering. In contrast, July was dry and sunny, corresponding perfectly to the third condition, at least on good *terroirs*. Mixed weather in August only partly fulfilled the fourth condition, despite a lovely, dry, sunny month of September. The grape harvest, which lasted from late September to late October, took place in dry, cool, and, above all, particularly sunny weather – thereby meeting the fifth and last condition, essential for a successful late vintage. Thus, 2008 can certainly be considered a good year, having fulfilled two and a half conditions out of five, including the third, which is *sine qua non*, without claiming to be an outstanding vintage.

The success of dry white wines depends on healthy grapes, with good sugar levels, plenty of fruit, adequate acidity, and low tannin content in the skins. This balance is easy to achieve on appropriate *terroirs*, provided the summer is temperate, without excessive heat or dryness after colour change. This was the case in both 2008 and 2007.

These conditions are also ideal for noble rot to develop on sweet, fruity grapes with good acidity to produce great vintages in Sauternes and Barsac. A few light showers alternating with drier periods are also necessary to promote the development of *Botrytis* and concentrate the grapes, as was the case in autumn 2008. Unfortunately, many estates were badly affected by frost in early April and rain in May, and the crop was terribly small.

An unusual winter, with particularly warm, dry weather in the first two months, followed by chilly, damp weather in March, resulting in sluggish vegetative growth

Like 2007, the winter of 2008 was anything but harsh. January was extraordinarily warm and February was among the driest, warmest, and sunniest in recent years. In contrast, March was particularly chilly (1.3°C below the average maximum temperature), with unusually high cumulative rainfall, a large number of days with rain, strong winds, and a marked deficit in sunshine (Tables I and III).

As a result, bud-break in early April was neither very early nor very rapid.

Table I
Average daily temperatures (average, minimum, and maximum) in March, compared to normal values (1971-2005). Data from Mérignac (Météo France).

Year	Temperatures (°C)					
	Average	Difference	Minimum	Difference	Maximum	Difference
2004	8.8	-2.6	4.2	-3	13.4	-3.6
2005	9.8	-2.3	4.5	-2.7	15.1	-1.9
2006	10.8	-1.6	6.7	-0.5	14.9	-2.1
2007	10.0	-2.9	5.7	-1.5	14.3	-2.7
2008	9.8	-3.1	6.4	-0.8	13.2	-3.8
Normal (1971-2005)	12.1		7.2		17.0	

A damp spring with late, uneven flowering

April was marked by variable weather. Temperatures fluctuated around normal values, with short periods of warm weather, relatively strong winds, and frequent, heavy showers. The most noteworthy phenomenon, however, was the frost at the beginning of the month.

On 7 April, the vineyard was struck by a relatively severe frost (-2 to -4°C) affecting early-maturing plots of Merlot and white wine varieties. The damage was not initially very visible as bud-break had barely started – the frost even destroyed some buds before they had completely opened. Estates in Sauternes were the worst hit, some even suffering as badly in 2008 as they did in 1991.

Average temperatures in April and May were about average (Table III), but well below 2007 values. This deficit, combined with high rainfall in May (Table II), led to slow vegetative growth.

Table II
Total rainfall in May and % of average rainfall (1971-2000). Data from Mérignac (Météo France INRA).

Year	Total (mm)	% of average rainfall
2004	73	87
2005	16	19
2006	47	56
2007	142	169
2008	151	181

Table III
Agroclimatic indicators in 2008, compared to the average for the decade 1997-2006.
Data from Villenave d'Ornon (INRA).

	Hours of sunshine		Average temperature (°C)		Total rainfall (mm)		Total ETP* (mm)	
	2008	1997-2006	2008	1997-2006	2008	1997-2006	2008	1997-2006
January	86	97	8.3	6.9	108	78	15	22
February	185	115	10.4	7.7	31	68	37	32
March	106	185	9.8	11.1	102	71	64	66
April	181	194	12.3	12.8	77	94	97	88
May	204	240	17.1	17.0	151	74	121	121
June	236	264	19	20.5	79	58	144	141
July	268	270	20.6	21.7	20	54	157	146
August	226	253	20.5	22.3	83	63	127	131
September	219	214	17	19.1	66	77	83	87
October	159	154	13.7	15.7	90	103	0	50
November	63	106	9.5	9.8	131	125	21	24
December	81	87	5.9	7.1	74	110	12	17
April - September	1334	1435	18	19	476	421	729	714
Year	2014	2178	14	14	1012	975	878	926

**Evapotranspiration potential corresponds to the quantity of water that would be released into the atmosphere if the soil were grassed and saturated with water. This indicates the water lost by evaporation from the soil and vine transpiration.*

In June, the weather remained cool and damp (Table III). This delayed flowering, which started, on average, on 11 June and ended on 25 June, around ten days later than in 2007 (Table IV).

Table IV
Comparison of the peak flowering and peak colour change dates in 2008 compared to 2007, 2006, 2005, 2004, and the mean of the last 10 years

Period	Peak flowering	Peak colour change
1998-2007	2 June	3 August
2004	8 June	12 August
2005	30 May	3 August
2006	4 June	6 August
2007	26 May	3 August
2008	11 June	15 August (started on 2 August)

This period was also marked by several thunderstorms, with 50 days of rain between April and July (the same as in 2007), high total rainfall (Figure 1), and some hail on 11 and 15 May.

Poor fruit set was observed in certain vineyards. The presence of downy mildew was unusually high, even worse than in 2007.

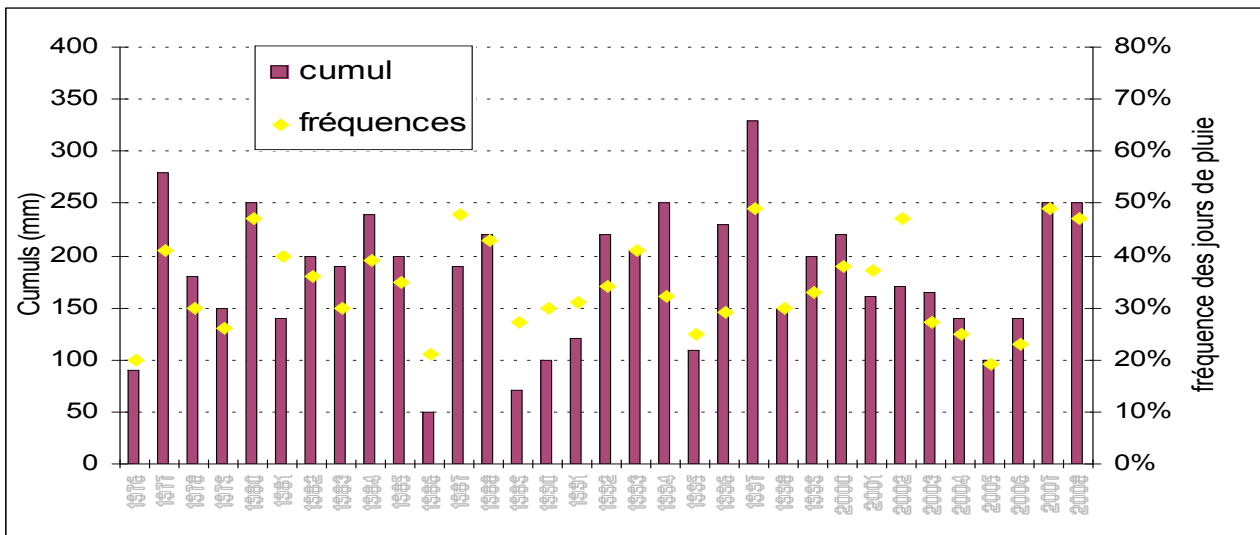


Figure 1
*Total rainfall and frequency of days with rain (total greater than 0.5 mm) from April to July.
 Data from Villenave d'Ornon (INRA).*

Variable weather: cool and dull in June and August, but dry in July, resulting in sufficient water stress to produce a good red wine vintage

Up until mid-June, the weather was cool, gloomy, and damp. Starting on the 17th, however, it turned sunny and hot – ideal for the completion of flowering.

Cool temperatures continued in July and August, with cumulative temperatures in the vicinity of normal 1976-2005 values, but below those in 2007 (**Figure 2**). In contrast, *there was more sunshine in August* than in 2007, with a total comparable to the ten-year average (**Figure 3**). By mid-July, most bunches had filled out, and the grapes were in very good condition.

Thanks to plentiful sunshine and, above all, low rainfall in July, water stress occurred briefly at the end of the month, restricting growth at exactly the right time, just before colour change (**Figure 4**). Due to the cool weather, the beginning of colour change was observed in early August, peaking on 15 August, i.e. 12 days later than usual (**Table III**). A few days of stable, hot, dry weather starting on 26 August enabled the grapes to start ripening, making up for lost time and reducing the gap observed between different plots at colour change.

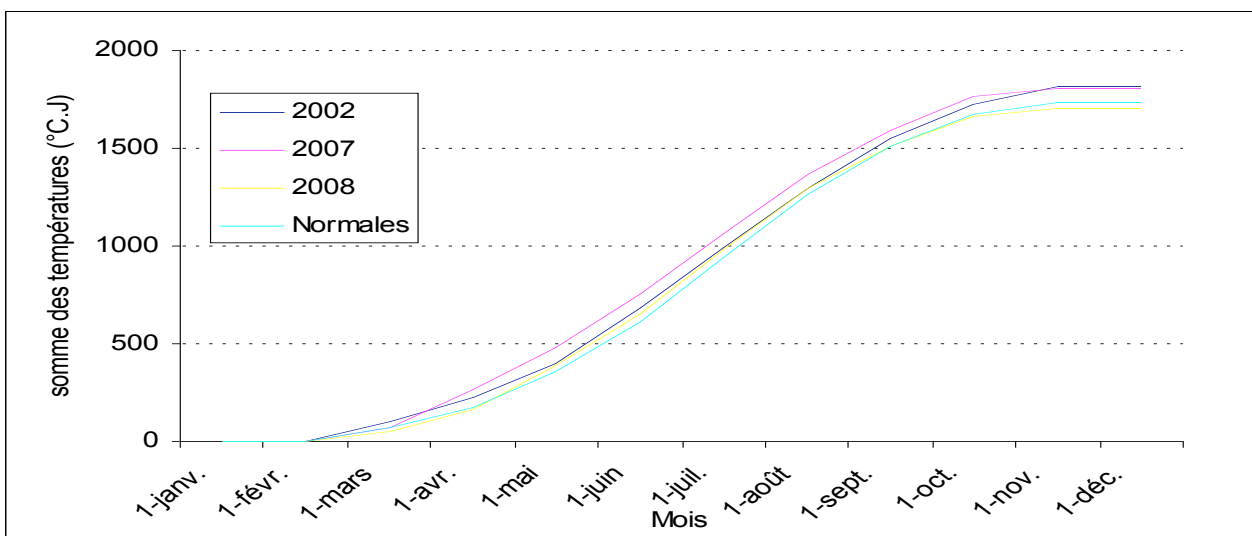


Figure 2
Sum of temperatures with (base of 10°C).

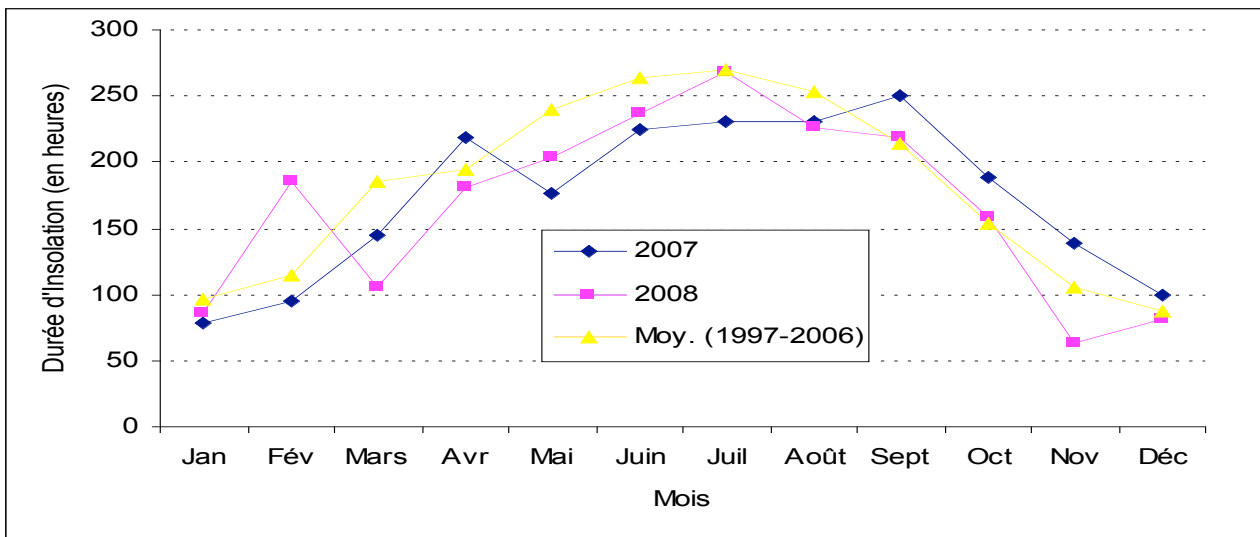


Figure 3
Hours of sunshine – Data from Villenave d'Ornon (INRA)

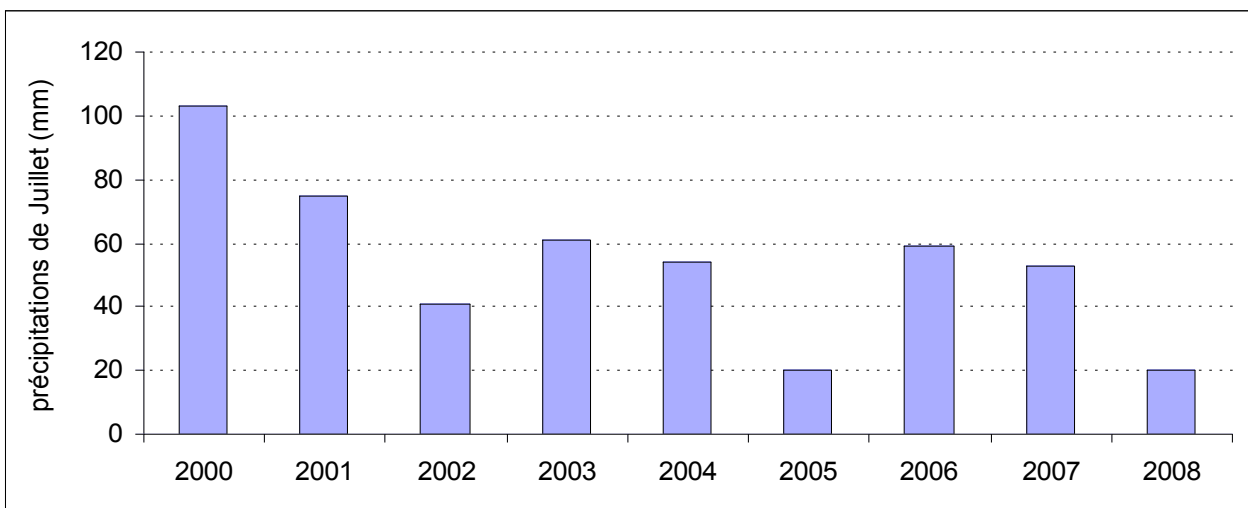


Figure 4
July rainfall compared with other vintages since 2000

However, four parameters that varied from estate to estate attenuated the effects of this weather pattern:

- soils with low water reserves,
- large leaf canopy,
- meticulous, early "green harvesting" operations, including leaf-thinning, suckering, and the removal of side-shoots after fruit-set,
- low yields.

The first two parameters promote a certain level of water stress, even in unfavourable weather. "Green harvesting" reduces the size of the grapes and minimises herbaceous aromas. For optimum effectiveness, these operations must be carried out exclusively by hand, and extremely meticulously – which represents a considerable expense. Finally, only low yields, as was the case in 2008, make it possible to produce grapes with sufficient concentration and colour under these conditions. Quite clearly, *terroir* and careful vineyard management play a key role in difficult vintages.

Cool, dry weather in September and October conducive to slow ripening, preserving aromas, and synthesising anthocyanins

After a few fine days in late August, unsettled weather, with frequent, light showers, returned in the first ten days of September. Fortunately, thanks to the delay in ripening, this poor weather did not have the disastrous effects one might have been expected. After 15 September, anticyclone conditions prevailed, bringing a long period of dry, sunny, cool weather that enabled the grapes to ripen undisturbed.

The vintage started later than in previous years (picking of white wine grapes began in mid-September and red varieties at the end of the month, i.e. 10 days later than in 2007), with cool weather during the final phases of ripening that was highly favourable to preserving aromas. The cool, but fine weather also minimised *Botrytis* development, reduced the size of the grapes, and enabled the fruit to ripen sufficiently on most types of *terroir*. The weight of individual grapes was slightly higher than in the previous vintage, but still lower than in 2004.

Thus, sugar accumulated slowly over a period of a few weeks, without a sharp drop in acidity, reaching values similar to 2007, but higher than 2004 (**Table V**).

Table V
Variations in grape sugar content and acidity during ripening

	Weight per 100 grapes (g)	Sugars (g/l)	TA (g/L H ₂ SO ₄)
2008			
8/9 Merlot	169	192	5.7
Cabernet sauvignon	121	173	7.4
29/9 Merlot	167	222	4.2
Cabernet sauvignon	124	203	4.7
2007			
3/9 Merlot	164	187	4.2
Cabernet sauvignon	134	177	5.8
24/9 Merlot	159	211	3.4
Cabernet sauvignon	116	213	4.2
2006			
28/8 Merlot	147	198	4
Cabernet Sauvignon	112	197	6.2
11/9 Merlot	136	249	3.1
Cabernet Sauvignon	124	228	4.9
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
2004			
30/8 Merlot	172	167	6.1
Cabernet Sauvignon	124	138	6.8
13/9 Merlot	165	208	3.4
Cabernet Sauvignon	136	190	3.9

As in 2007, the prevailing weather conditions and slow ripening were responsible for extending the harvest from mid-September to late October (for the latest-ripening Cabernet vineyards).

Low yields undoubtedly facilitated ripening. Furthermore, thanks to good vineyard management (carefully timed spraying and "green harvesting") and dry weather at the end of ripening, the grapes were harvested in very good condition. Furthermore, early attacks of downy mildew did not have a negative impact on quality, as had been feared.

Dry, sunny weather and cool nights resulted in slow, even ripening, which concentrated colouring matter and tannins (**Table VII**). Quantities were similar to 2007, but the skins remained thick and colour extraction was sometimes more difficult than in previous vintages.

Table VII

Phenolic analysis (Glories method) of the grapes in our reference vineyards in the last sample taken before the harvest, compared with recent vintages

	A1 (mg/L)	PEA (%)	TPC
2008			
Merlot	1864	35	37
Cabernet sauvignon	2442	35	42
2007			
Merlot	1904	50	47
Cabernet sauvignon	2411	40	46
2006			
Merlot	1871	61	57
Cabernet sauvignon	2288	40	50
2005			
Merlot	1998	55	61
Cabernet sauvignon	2292	49	57

***A1** corresponds to the quantity 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 Extractable Anthocyanins. PEA (%) increases during ripening, varying from 35 to 70% and corresponding to the following ratio: (Extractable Anthocyanins / Total Anthocyanins) * 100.

* **TPC** corresponds to Total Phenolic Content.

To make the most of this vintage, picking had to be delayed as long as possible, and was sometimes interrupted for several days to ensure that each plot and grape variety achieved its full potential. The best Merlot grapes came from early-ripening *terroirs* with clay soil or the finest limestone plateaux. However, results for this grape variety were not as good in late-ripening areas and on sandy soils. Cabernet Franc on the right bank and Cabernet Sauvignon on the left bank amply rewarded all the care and effort lavished on them by winegrowers throughout this difficult growing season. Once again, Petit Verdot, which caused major concern due to the lateness of the harvest, turned out to be amazing, benefitting as much as the Cabernet varieties from the Indian summer.

In late vintages following on the heels of a cool summer, grapes, especially the Cabernets, used to be affected by "green pepper" aromas associated with perceptible concentrations of *isobutylmethoxy pyrazine* (IBMP). This problem is now avoided by controlling the vines' vegetative growth and ensuring appropriate nitrogen supplies, early leaf-thinning, and "green harvesting", to remove bunches that have failed to change colour. As a result, on gravel soils well-suited to Cabernet Sauvignon, it was perfectly possible to obtain grapes without any herbaceous character, although results were less reliable on other types of *terroir* (Figure 5).

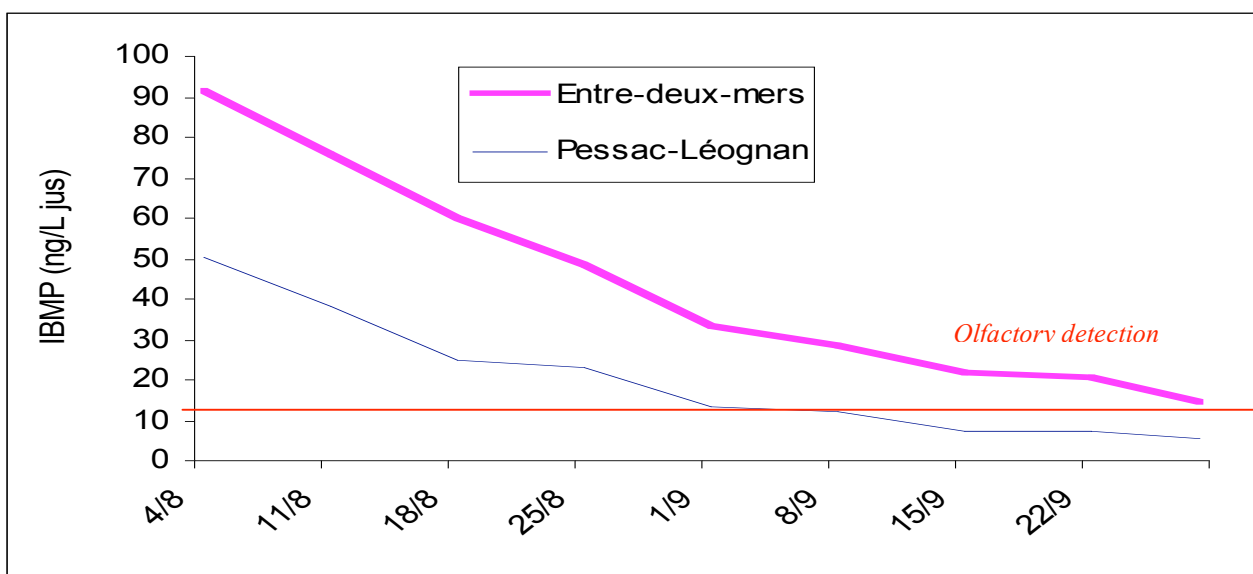


Figure 5

Variations in IBMP content in Cabernet Sauvignon grapes (in instances where early leaf-thinning was practised)

Weather conditions in 2008 were practically perfect for dry white wines. Indeed, the Sauvignon Blanc grapes were sweet, with good acidity and fruit – at least as fine as in the unanimously well-received 2007 vintage. Without any exaggeration, the Sémillon wines can be described as outstanding. Their concentration and balance also obviously owe a great deal to the low yields.

Picking in Sauternes and Barsac took place in *tries*, or "waves" from mid-September to early November. Botrytis developed slowly at first, requiring frequent (and costly) picking to bring in grapes with just the right degree of noble rot. *Botrytis* became widespread in early October after short periods of damp weather. A dry spell at the end of the month was favourable for the last, most plentiful *tries*.

Although not as concentrated as in 2007, the 2008 Sauternes and Barsac musts displayed purity and fruit, as well as an extraordinary sugar-acid balance.

Overall, the dry white wines of Bordeaux are outstanding, the reds good to very good, and Sauternes and Barsac excellent.

It seemed unlikely that the dry white wines could be better than in 2007, but the 2008s are extraordinarily fruity and concentrated, with a long aftertaste.

It took longer to judge the quality of the red wines. This was because, although alcoholic fermentation was completed without any problems, malolactic fermentation tended to take an extremely long time, which delayed initial tastings prior to blending. These tastings nevertheless showed the 2008 red wines to have an intense colour, amazing fruit, good structure, and tannic freshness worthy of great Bordeaux in a good vintage.

Although only very small quantities were produced in Sauternes and Barsac, the wines are brilliant and lively, with an irresistible flavour. They are ideal for wine lovers who enjoy the pure and not overly heavy style of sweet white wine.

