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The 2004 Vintage

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Ripeness was monitored made throughout the 2004 growing season in the five reference vineyards, in Saint Emilion, Pauillac, Margaux, Pessac-Léognan, and the Entre-Deux-Mers, used by the Faculty of Oenology for the past thirty years.

The 2004 vintage followed one marked by a small harvest due to drought conditions and extremely high summer temperatures. Starting with the flowering (pollen count), technicians were surprised by the fertility of the buds (base buds, tendrils, etc.) and the size of the bunches. The vines reacted as though they had stored reserves in 2003 that promoted the development of all the grapes, which explains why yields were very high, despite fairly severe thinning. 2004 can be described as a classic Bordeaux vintage in light of high summer and autumn temperatures, as well as the intrinsic balance of the wine's various components (alcohol, acids, phenolic compounds).

Winter temperatures were lower than average and there was a soil moisture deficit. Bud break occurred in April, but vegetative growth was not vigorous due to cold, wet weather.

In spring, the month of May, was relatively warm and wet (*table 1*). Beautiful weather in the latter part of the month encouraged flowering in early-maturing plots. However, a violent hail storm struck part of the Right Bank on May 20th and 21st. The Merlot mainly flowered in from June 4th-10th, a particularly short flowering period thanks to warm, sunny weather, The Cabernets followed suit, finishing in late June. Peak flowering in our red wine reference vineyards was around the 8th of June, i.e. 5-10 days later than the 1993-2002 average.

Summer was not very warm (*tables 1, 2, and 3*). There was a fair amount of sunshine in July with a few light showers, but temperatures were only average except for a few peaks toward the end of the month. There was a considerable amount of rainfall in August, with relatively low temperatures and little sunshine. The temperature range (variation between highs and lows) was fairly small for this time of year.

However, the weather was very pleasant in September with good sunshine and high temperatures for the season, particularly in the daytime. Cool nights prevented the development of rot.

Table 1
Comparison of weather statistics for the 2004 vintage
with the 30 year average – 1973-2002 (N).

Recorded at Villenave-D'Ornon, (Domaine de la Grande Ferrade)

	Temperature (° C)		Sunshine (h)		Precipitation (mm)	
	2004	N	2004	N	2004	N
April	11,8	12,0	197	173	76	81
May	16,1	15,85	278	199	92	73
June	21,0	19	315	226	14	58
July	21,0	21,15	283	244	46	52
August	21,8	21,25	241	231	102	57
September	19,2	18,35	208	191	45	85
October	16,1	14,4	142	137	115	87

Table 2
Comparison of weather conditions during the ripening
of the 2004 vintage with those of the past five years

		Temperatures (°C)	Sunshine (h)	Precipitations (mm)
July	2004	21,0	283	47
	2003	28,2	301	61
	2002	20,3	243	41
	2001	21,0	266	103
	2000	20,3	292	85
August	2004	21,8	242	102
	2003	32,6	289	51
	2002	20,2	218	119
	2001	22,8	266	53
	2000	22,4	270	29
September	2004	19,2	209	44
	2003	25,2	219	41
	2002	18,1	319	44
	2001	17	209	88
	2000	19,5	219	44
October 1 – 20	2004	21,2	94	107
	2003	-	-	-
	2002	15,8	102	77
	2001	18,0	112	83
	2000	14,1	90	132

Table 3
Comparison of weather conditions in 2004
(April to September) with the past seven years

Temperature (°C)	Sunshine (h)	Precipitation (mm)
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1998	18,4	1226	536
1999	19,1	1426	523
2000	18,8	1455	475
2001	18,3	1505	437
2002	18,1	1414	404
2003	20,3	1556	317
2004	17,6	1523	375

Peak *véraison*, when half of the grapes had changed colour, occurred on about August 10th. Although 10 days later than 2003, this is average for Bordeaux. Limited acid combustion during this summer period was not really very propitious for ripening. However, the weather was conducive to anthocyanin synthesis and the degradation of these molecules observed in 2003 did not occur.

Thanks to good weather in the month of September and early October, the grapes achieved the right balance to make great wine. Acidity was higher than in 2003 (*table 4*), but perfectly acceptable, as malic acid levels often exceeded 2 g/l. The Merlot were ripe by the end of September, but it took a further 15-20 days for the Cabernet-Sauvignon, which finished ripening in October, when there was some rainfall but also above average sunshine and temperatures (*table 1*).

Table 4
Grape balance at harvest time in several vintages
Figures correspond to averages in reference vineyards
(M = Merlot, CS = Cabernet-Sauvignon)

	Sugar (g/l)		Total Acidity (g/l H ₂ SO ₄)		Sugar/total acidity		100 grapes (g)	
	M	CS	M	CS	M	CS	M	CS
1998	215	200	3,5	3,8	61,4	52,6	175	149
1999	219	202	3,3	3,6	66,4	56,1	153	136
2000	245	220	3,5	3,8	70	57,9	173	147
2001	225	202	3,5	4,5	64,3	44,9	182	143
2003	238	222	2,5	3,3	95,2	67,2	145	118
2004	223	201	3,4	4,2	65,6	47,8	165	136

Grapes in the five reference vineyards reflected the characteristics of their *terroir* (*table 5*). The S/TA ratio was high for Merlot, but lower for Cabernet-Sauvignon especially in the Entre-Deux-Mers. However, the large amount of juice led to high yields. The juice/solid mass ratio indicates the concentration of the grape juice.

Table 5
Characteristics of ripe grapes
in 5 reference vineyards
V: volume of juice, M: mass of skins and seeds

	100 grapes (g)		V juice (ml)		V/M		S/At	
	M	CS	M	CS	M	CS	M	CS
Saint Emilion	163	133	106	79	2,2	1,7	61,4	54,1
Pauillac	174	113	110	70	2,0	1,9	63,7	43,5
Margaux	177	163	122	88	2,8	1,3	69,7	59,1
Pessac Léognan	180	125	123	80	2,7	2,1	71,2	48,4
Entre-Deux-Mers	145	130	90	80	1,9	1,9	62,8	37,0

Table 6 shows the phenolic maturity data very clearly. Grapes from the 2004 vintage contained large amounts of anthocyanins. The polyphenol concentration was higher in 2003, but they were more difficult to extract.

Table 6
Examples of phenolic characteristics of ripe Merlot grapes,
from several Saint-Emilion terroirs, in the past two vintages

	Merlot	A1 (mg/l)	PAE (%)	RPT
<u>Graves</u>	2003	1425	44	48
	2004	1857	42	54
<u>Limestone plateau</u>	2003	1292	66	54
	2004	2300	37	55
<u>Côtes A-C</u>	2003	1236	64	50
	2004	2147	38	54

A1: Anthocyanin potential, PAE: Anthocyanin extractability
RPT : Total phenolic concentration

The fermentation of red wines did not present any major difficulties. The grapes needed to be sorted to eliminate green grapes, even if there had been bunch thinning. Alcoholic fermentation was completed quickly (with or without cultured yeast), and high-temperature post-fermentation skin contact gave the wines body and good tannic structure. The wines are deep-coloured with good acidity

and a great deal of freshness. However, Cabernet-Sauvignon and Merlot grapes in certain late-maturing areas of Bordeaux were not entirely ripe, thereby contributing herbaceous, bitter characteristics. The great red wines of Bordeaux are nevertheless indisputably fine, with good tannic structure. These tannins are rich, and the wines are fairly round. Fruity aromas overlay complex flavours on the palate. Furthermore, the good acidity augurs well for ageing potential.

The dry white wines are very fruity and floral, with good freshness. Sémillon contributes body and richness.

The sweet white wines are very aromatic, but much depends on the harvest date. *Botrytis cinerea* developed very well in the beginning, but was later upset by the rain, resulting in uneven quality.

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