

Supplementary data

Table SM1: Characteristics of the Cabernet Sauvignon and Merlot parcel (Pauillac appellation) selected for microvinification and vinification experiments.

Vine	Surface (ha)	Density (vine/ha)	Planting	Graft	Orientation
Merlot	0.87	10400	2004	101.14	East-west
Cabernet Sauvignon	1.74	10400	1966	101.14	East -west

Table SM2: Rainfall and temperatures for each decades from July to October 2012 and 2014, compared to the average 1975-2011 for rainfall and 1995-2011 for temperature (weather station from the winery).

Vintage	Rainfall (mm)				Temperature (°C) (min-max)					
	1st	2nd	3th	total	1st	2nd	3th	Moy	>30°C ²	
2012	July	15.5	8	13.5	37.0 (49.6)	10-30	11-30	14-41	21.7	9
	August	6.0	0	2.0	8.0 (37.0)	13-40	14-39	13-32	23.3	10
	September	0	3.5	57.0	60.5 (54.2)	12-33	9-32	9-29	20.1	3
	October	23.5	81	23.1	115.5/40.5 ¹ (78.1)	8-31	4-24	-1-25	15.9 ¹	0
2014	July	15.5	19.0	17.0	51.5 (49.6)	13-33	11-30	14-35	21.7	9
	August	21.5	22.0	7.5	51.0 (37.0)	12-31	10-28	8-29	18.1	1
	September	4.5	13.0	0.5	18.0 (54.2)	11-33	13-34	8-31	21.2	5
	October	46.5	21.0	1.0	68.5/67.0 ¹ (78.1)	7-28	11-30	5-26	17.1	0

¹ total rainfall from october 1st to the latest harvest date. ² Number of days per month with maximum temperature above 30°C.

Table SM3: Harvest dates, composition of the musts of Cabernet Sauvignon (2012 experiment)

Codes	Dates	Days after mid-veraison	Sugar (g/L)	pH	TA (g/L H ₂ SO ₄)	Malic acid (g/L)
D-4	8-10	55	213 ± 5a	3.49 ± 0.05	3.5 ± 0.1	3.3 ± 0.1a
D	12-10	59	220 ± 5ab	3.47 ± 0.02	3.5 ± 0.2	3.4 ± 0.1a
D+4	16-10	63	225 ± 5b	3.55 ± 0.05	3.5 ± 0.2	4.1 ± 0.2b

TA, Titratable acidity. VA, volatile acidity. Data represent mean values ± standard deviations. Different letters indicate significant differences at $p < 0.05$.

Tableau SM4: Harvest dates and composition of the wines of Cabernet Sauvignon (2012 experiment).

Codes	Dates	Sugar (g/L)	Alcohol (% vol.)	pH	TA (g/L H ₂ SO ₄)	VA (g/L H ₂ SO ₄)
D-4	8-10	<2	12.55 ± 0.03	3.76 ± 0.05	2.92 ± 0.2	0.21 ± 0.05
D	12-10	<2	12.54 ± 0.00	3.80 ± 0.02	2.84 ± 0.2	0.20 ± 0.05
D+4	16-10	<2	12.61 ± 0.02	3.80 ± 0.04	2.77 ± 0.2	0.22 ± 0.05

TA, Titratable acidity. VA, volatile acidity. Data represent mean values ± standard deviations. Different letters indicate significant differences at $p < 0.05$.

Tableau SM5: Harvest dates and composition of Cabernet Sauvignon and Merlot musts (2014 experiment)

Variety	Codes	Dates	Days after mid-veraison	Sugar (g/L)	pH	TA (g/L H ₂ SO ₄)	Malic acid (g/L)
M	D-6	18-09	44	221 ± 4a	3.36 ± 0.02a	4.10 ± 0.2a	2.4 ± 0.5a
	D	24-09	50	226 ± 5a	3.43 ± 0.01b	3.93 ± 0.2a	2.4 ± 0.1a
	D+4	28-09	54	225 ± 5a	3.38 ± 0.04ab	3.81 ± 0.2a	2.2 ± 0.4a
	D+12	06-10	62	237 ± 6b	3.39 ± 0.03ab	4.40 ± 0.1b	2.3 ± 0.2a
CS	D-3	07-10	57	218 ± 5a	3.45 ± 0.05a	3.70 ± 0.1c	3.14 ± 0.1a
	D	10-10	60	218 ± 5a	3.5 ± 0.03b	3.45 ± 0.2b	3.69 ± 0.2b
	D+2	12-10	62	217 ± 6 a	3.49 ± 0.02ab	3.77 ± 0.1c	4.07 ± 0.1c
	D+7	17-10	67	236 ± 4b	3.51 ± 0.04b	3.20 ± 0.1a	3.55 ± 0.1b

Data represent mean values ± standard deviations. Different letters indicate significant differences at $p < 0.05$.

Tableau SM6: Harvest dates and composition of Merlot and Cabernet Sauvignon wines (2014 vintage)

Variety	Codes	Dates	Sugar (g/L)	TAV (% vol.)	pH	TA (g/L H ₂ SO ₄)	VA (g/L H ₂ SO ₄)
M	D-6	18-09	<2	13.31 ± 0.0a	3.52 ± 0.05b	3.57 ± 0.05	0.23 ± 0.03a
	D	24-09	<2	13.33 ± 0.02a	3.54 ± 0.06a	3.50 ± 0.04	0.29 ± 0.02b
	D+4	28-09	<2	13.70 ± 0.02b	3.66 ± 0.06ab	3.46 ± 0.05	0.19 ± 0.02a
	D+12	06-10	<2	14.2 ± 0.07c	3.65 ± 0.04ab	3.45 ± 0.05	0.23 ± 0.03a
CS	D-3	07-10	<2	13.29 ± 0.02a	3.42 ± 0.02a	3.55 ± 0.1c	0.27 ± 0.01b
	D	10-10	<2	13.22 ± 0.04a	3.50 ± 0.03b	3.25 ± 0.09a	0.19 ± 0.01a
	D+2	12-10	<2	13.27 ± 0.02a	3.45 ± 0.02ab	3.31 ± 0.05ab	0.20 ± 0.01a
	D+7	17-10	<2	14.06 ± 0.05b	3.55 ± 0.03c	3.42 ± 0.05b	0.18 ± 0.02a

Data represent mean values ± standard deviations. Different letters indicate significant differences at $p < 0.05$.

SUPPLEMENTARY DATA

Allamy, L., van Leeuwen, C., & Pons, A. (2023). Impact of harvest date on aroma compound composition of Merlot and Cabernet-Sauvignon must and wine in a context of climate change: a focus on cooked fruit molecular markers. *OENO One*, 57(3).
<https://doi.org/10.20870/oeno-one.2023.57.3.7458>

Table SM 7: Pearson correlation matrix of aroma compounds content and aroma descriptors intensity in Merlot and Cabernet Sauvignon musts from sequential harvest dates.

Compounds ¹	MND	γ -C9	Mlact	Fur	HFur	1,5-Octa	Veg.	Fresh F	Cooked F.	Sugar
MND	1	-0.07	-0.153	-0.02	-0.304	0.101	0.159	-0.06	-0.438	-0.368
γ -C9		1	<i>0.775</i>	0.597	<i>0.716</i>	0.862	-0.329	-0.101	0.334	0.035
Mlact			1	<i>0.719</i>	<i>0.802</i>	<i>0.818</i>	-0.466	0.379	0.308	0.137
Fur				1	0.434	0.580	0.129	0.186	-0.170	-0.510
HFur					1	0.571	-0.429	0.491	0.667	0.456
1,5-Octa						1	-0.214	-0.174	0.360	0.016
Veg.							1	-0.478	-0.311	-0.522
Fresh F								1	0.02	0.139
Cooked F.									1	0.864
Sugar										1

¹ MND, 3-methyl-2,4-nonanedione; γ -C9, γ -nonalactone; Mlact, massoia lactone; Fur, furaneol; HFur, homofuraneol; Veg., herbaceous/vegetative; Fresh F., fresh fruit; Cooked F., cooked fruit. Values in italics are significant at $p < 0.05$ or $p < 0.01$ in bold.