

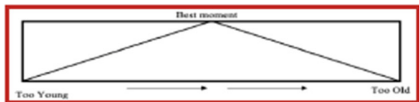
## Supplementary material

Figure S1. Tasting sheet (miniaturised from size A4).

Sample Code: 965

**1. Please draw a mark on the scale to evaluate the evolution you perceived according to the age that you attribute to the wine (consider the image as example):**

Initial ——— Best moment ——— Dead



**2. Please draw a mark on the scale according to your perception on the overall quality:**

Very low quality ——— Very high quality

**3. Based on the answers given above, please rate the following attributes, according to your perception:**

Are the different aromas and flavours balanced, without being overpowering?

Unbalanced ——— Balanced

Do you fill the wine faulty?

None ——— A lot

Evaluate the overall wine body.

Light ——— Full

Score the wine overall complexity.

Low complexity ——— High complexity

**How long the different sensations and flavours, linger in your mouth?**

Short ——— Long

**4. Which terms would you use to describe better the taste and mouthfeel sensation of this wine? Please, check maximum 5 descriptors:**

- ☐ Viscosity
- ☐ Smoothness
- ☐ Acidity
- ☐ Dryness
- ☐ Saltiness
- ☐ Umami
- ☐ Astringency

- ☐ Minerality
- ☐ Sweetness
- ☐ Vegetal
- ☐ Sourness
- ☐ Bitterness
- ☐ Other \_\_\_\_\_

**5. Which terms would you use to describe better the aroma of the wine? Please, check maximum 5 descriptors:**

- ☐ Fresh fruit
- ☐ Mature fruit
- ☐ Dried fruit
- ☐ Floral
- ☐ Vegetal
- ☐ Spicy
- ☐ Earthy
- ☐ Oak

- ☐ Balsamic
- ☐ Tobacco
- ☐ Chocolate
- ☐ Kerosene
- ☐ Wet stone/Flint stone
- ☐ Straw/Hay
- ☐ Honey
- ☐ Off Flavour \_\_\_\_\_

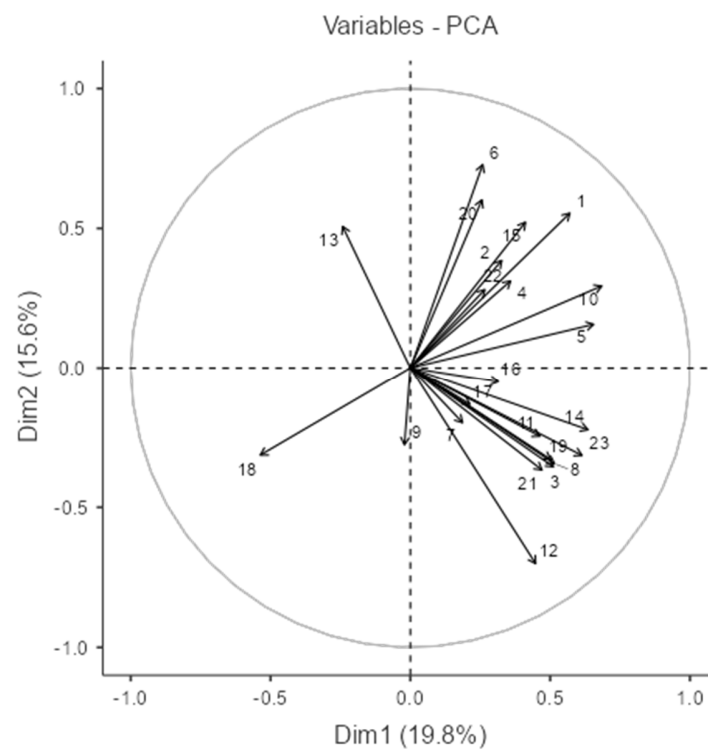
**6. Predicted age of the wine:** \_\_\_\_\_ (years after vintage)

Panel Personal Code: \_\_\_\_\_

How do you describe the colour of this wine?

Sample Code	Yellow greenish	Deep amber	Predicted age
250			_____
883			_____
305			_____
965			_____
921			_____
443			_____
795			_____
906			_____

Figure S2. PCA of Quality scores using tasting individuals as variables to show consensus among tasters<sup>a,b</sup> (numbers correspond to each taster).



<sup>a</sup> The placement of most tasters on the same positive side of Dimension 1 indicates consensus among judges, following the approach described by Caissie et al. [59].

<sup>b</sup> The 3 judges who were not in consensus with the rest of the panel (9,13,18) were not excluded from further analyses, because they were within the 95% confidence interval and thus not statistical outliers, as described by Mafata et al. [60].

Table S1. Frequency of citation of aroma descriptors of all tasted wines (descriptors used in correspondence analysis are written in bold).

	AL14	AL17	AL19	AL22	AR06	AR10	AR11	AR15	AR17	PB06	PB10	PB12	PB15	PB20	SB13	SB16	SB19	SB21	Total
<b>Mature Fruit</b>	6	8	7	5	8	11	9	5	10	10	8	10	11	8	4	8	3	1	132
<b>Floral</b>	7	7	8	14	3	3	5	8	5	1	5	10	8	10	7	7	4	12	124
<b>Fresh Fruit</b>	7	8	9	17	0	1	4	8	3	1	10	5	8	10	8	4	0	12	115
<b>Vegetal_A</b>	9	9	8	9	2	2	6	4	6	4	5	6	4	8	6	5	7	14	114
<b>Spicy</b>	5	7	3	4	7	3	4	5	5	5	4	4	3	8	6	5	3	6	87
<b>Honey</b>	0	5	2	4	12	9	3	7	9	10	4	3	4	3	3	2	4	0	84
<b>Oak</b>	8	5	6	3	6	6	9	4	3	3	3	4	2	5	4	2	1	0	74
<b>Balsamic</b>	9	5	4	2	9	7	5	5	7	7	0	2	1	1	2	1	3	4	74
<b>Dried Fruit</b>	1	3	1	2	12	9	5	3	2	6	3	4	3	2	2	4	5	2	69
<b>Earthy</b>	5	1	2	2	4	2	3	0	3	2	1	1	2	1	2	5	11	4	51
Kerosene	4	2	6	2	3	2	5	4	3	1	0	2	2	2	1	3	1	3	46
WetStone	3	3	4	2	2	2	5	4	0	2	1	0	0	3	6	4	3	2	46
Straw	1	1	3	1	3	2	1	4	1	3	1	2	1	1	3	2	3	2	35
Chocolate	0	0	0	1	4	3	1	0	2	5	3	1	2	0	1	1	3	0	27
Tobacco	0	1	0	0	1	1	2	0	1	5	1	1	3	2	1	2	3	0	24
Total	65	65	63	68	76	63	67	61	60	65	49	55	54	64	56	55	54	62	1102

Table S2. Frequency of citation of flavour descriptors of all tasted wines (descriptors used in correspondence analysis are written in bold).

	AL14	AL17	AL19	AL22	AR06	AR10	AR11	AR15	AR17	PB06	PB10	PB12	PB15	PB20	SB13	SB16	SB19	SB21	Total
<b>Acidity</b>	16	15	17	18	16	14	20	17	15	8	11	15	11	13	12	10	13	20	261
<b>Minerality</b>	10	8	15	9	6	6	10	9	8	4	5	8	9	6	9	5	4	8	139
<b>Dryness</b>	10	8	9	6	8	6	7	8	11	4	7	8	7	6	5	9	9	10	138
<b>Saltiness</b>	9	5	8	5	12	6	7	10	9	7	6	3	10	9	9	6	7	9	137
<b>Bitterness</b>	7	4	8	5	8	6	7	5	7	7	6	4	3	6	5	9	7	8	112
<b>Smoothness</b>	3	9	4	4	5	8	7	8	6	9	8	4	11	7	5	3	3	2	106
<b>Sweetness</b>	5	7	3	8	5	6	2	1	2	8	5	12	4	6	3	6	5	4	92
<b>Vegetal_F</b>	7	5	5	4	3	2	4	4	6	2	4	4	6	8	6	3	6	11	90
<b>Sourness</b>	3	3	4	4	7	2	6	2	4	6	4	3	1	4	4	5	11	5	78
Viscosity	2	4	2	4	4	4	3	5	4	5	7	2	4	3	2	3	4	3	65
Umami	5	3	1	0	6	5	3	3	3	3	4	3	3	2	1	2	3	1	51
Astringency	1	2	4	3	6	3	4	3	2	3	2	2	3	2	2	1	3	2	48
Total	78	73	80	70	86	68	80	75	77	66	69	68	72	72	63	62	75	83	1317

Table S3. Frequency of citation of wines clustered according to their sensory descriptors.

Wines	Freshness						Austere						Mellowed						Acidity
	Vegetal_A	Vegetal_F	Spicy	Sweetness	Floral	FreshFruit	Smoothness	Bitterness	Dryness	Saltiness	Minerality	MatureFruit	Oak	Balsamic	Honey	DriedFruit	Earthy	Sourness	Acidity
AL14	9	7	5	5	7	7	3	7	10	9	10	6	8	9	0	1	5	3	16
AL19	8	5	3	3	8	9	4	8	9	8	15	7	6	4	2	1	2	4	17
AR11	6	4	4	2	5	4	7	7	7	7	10	9	9	5	3	5	3	6	20
AR15	4	4	5	1	8	8	8	5	8	10	9	5	4	5	7	3	0	2	17
AR17	6	6	5	2	5	3	6	7	11	9	8	10	3	7	9	2	3	4	15
PB10	5	4	4	5	5	10	8	6	7	6	5	8	3	0	4	3	1	4	11
PB15	4	6	3	4	8	8	11	3	7	10	9	11	2	1	4	3	2	1	11
PB20	8	8	8	6	10	10	7	6	6	9	6	8	5	1	3	2	1	4	13
SB13	6	6	6	3	7	8	5	5	5	9	9	4	4	2	3	2	2	4	12
AL17	9	5	7	7	7	8	9	4	8	5	8	8	5	5	5	3	1	3	15
SB16	5	3	5	6	7	4	3	9	9	6	5	8	2	1	2	4	5	5	10
PB12	6	4	4	12	10	5	4	4	8	3	8	10	4	2	3	4	1	3	15
AL22	9	4	4	8	14	17	4	5	6	5	9	5	3	2	4	2	2	4	18
PB06	4	2	5	8	1	1	9	7	4	7	4	10	3	7	10	6	2	6	8
AR10	2	2	3	6	3	1	8	6	6	6	6	11	6	7	9	9	2	2	14
AR06	2	3	7	5	3	0	5	8	8	12	6	8	6	9	12	12	4	7	16
SB21	14	11	6	4	12	12	2	8	10	9	8	1	0	4	0	2	4	5	20

Table S4. Standard wine physical-chemical analysis.

Wines	Alcoholic strength (% v/v)	Total acidity (g/L)	Volatile acidity (g/L)	Residual sugar (g/L)	Malic acid (g/L)	Lactic acid (g/L)	pH	Total SO <sub>2</sub> (mg/L)	Free SO <sub>2</sub> (mg/L)
AL14	13.5	5.7	0.25	1.1	1.9	Nd <sup>a</sup>	3.39	110	5
AL17	14.2	4.5	0.38	1.6	1.8	Nd	3.77	116	4
AL19	13.4	6.3	0.33	1.5	1.7	Nd	3.42	94	2
AL22	12.5	6.7	0.30	1.4	2.5	Nd	3.40	112	6
AR06	13.6	5.1	0.30	3.5	1.6	0.3	3.41	81	18
AR10	13.9	5.8	0.30	4.3	1.4	0.1	3.33	80	7
AR11	14.0	5.9	0.24	4.4	1.4	0.2	3.36	99	17
AR15	14.5	5.9	0.33	4.6	1.3	Nd	3.34	62	16
AR17	13.8	6.3	0.33	1.9	1.2	0.2	3.25	123	30
PB06	11.3	6.4	0.15	8.8	1.7	0.3	3.13	56	2
PB10	13.2	6.0	0.28	10.9	1.6	Nd	3.25	72	2
PB12	12.8	6.0	0.23	1.8	1.2	Nd	2.98	26	2
PB15	12.7	6.6	0.24	1.8	1.7	Nd	3.07	54	2
PB20	11.9	5.4	0.26	2.3	1.2	Nd	3.12	35	2
SB13	12.2	5.7	0.33	5.8	2.2	Nd	3.45	70	3
SB16	12.8	5.6	0.30	6.3	1.6	Nd	3.31	91	6
SB19	12.8	6.3	0.30	6.0	1.7	Nd	3.14	78	10
SB21	12.6	6.1	0.33	7.4	1.0	0.1	3.06	91	21

<sup>a</sup> Not detected.

Table S5. Pearson coefficients of correlation among standard physical-chemical analysis.

	Age	pH	Ethanol	Total Acidity	Volatile Acidity	Malic Acid	Lactic Acid	Sugar	Total SO2	Free SO2
Age	—									
pH	0.004	—								
Ethanol	0.058	0.521 *	—							
Total Acidity	-0.187	-0.580 *	-0.349	—						
Volatile Acidity	-0.494 *	0.579 *	0.531 *	-0.378	—					
Malic Acid	-0.055	0.498 *	-0.221	0.106	0.050	—				
Lactic Acid	0.592 **	-0.065	-0.020	-0.007	-0.343	-0.238	—			
Sugar	0.361	-0.251	-0.289	0.114	-0.194	-0.129	0.207	—		
Total SO2	-0.275	0.637 **	0.468	-0.091	0.511 *	0.307	0.118	-0.200	—	
Free SO2	-0.074	-0.023	0.442	0.035	0.326	-0.455	0.514 *	-0.014	0.445	—

Note: \*  $p < .05$ , \*\*  $p < .01$ .

Table S6. Polyphenolic and Cielab determinations.

Wines	TPI	HA (mg/L)	Abs420	L*	a*	b*	C*	H*
AL14	12.3	69	0.369	93.22	-1.11	26.13	26.31	96.87
AL17	11.2	70	0.187	95.66	-1.04	15.68	15.76	96.63
AL19	11.5	73	0.151	97.37	-0.99	11.59	11.68	96.43
AL22	9.9	53	0.109	98.40	-0.73	7.04	7.14	96.14
AR06	11.3	42	0.381	95.20	-2.01	22.58	22.63	96.95
AR10	12.1	61	0.323	95.94	-1.40	16.55	16.67	96.62
AR11	8.3	41	0.243	96.12	-1.42	16.56	16.69	96.61
AR15	9.0	65	0.143	96.31	-1.48	15.80	15.86	96.52
AR17	9.0	65	0.111	96.10	-1.46	16.51	16.57	96.59
PB06	12.8	48	0.390	97.60	-1.12	9.86	10.04	96.30
PB10	10.4	58	0.258	96.96	-1.39	12.05	12.17	96.44
PB12	10.2	64	0.232	97.09	-1.38	12.15	12.26	96.42
PB15	9.9	52	0.216	97.94	-1.55	10.33	10.43	96.20
PB20	10.2	46	0.214	97.83	-1.26	8.28	8.34	96.03
SB13	12.3	69	0.172	96.77	-1.83	16.65	16.78	96.72
SB16	11.0	69	0.234	95.58	-1.98	21.19	21.29	96.86
SB19	11.4	73	0.166	96.63	-1.60	15.39	15.52	96.56
SB21	10.0	69	0.092	97.34	-1.03	8.33	8.42	96.33

TPI, Total polyphenolic index; HA, Hydroxycinnamic Acid; Abs420, Absorbance at 420 nm.



Table S7. Pearson coefficients of correlation among spectrophotometric and CIElab colour determinations.

	Age	TPI	HA	A420	L*	a*	b*	C*	H*
Age	—								
TPI	0.283	—							
HA	-0.395	0.272	—						
A420	0.816 ***	0.645 **	-0.313	—					
L*	-0.309	-0.293	-0.311	-0.462	—				
a*	-0.257	0.149	0.260	-0.064	-0.097	—			
b*	0.381	0.236	0.259	0.467	-0.947 ***	0.129	—		
C*	0.383	0.239	0.258	0.470 *	-0.947 ***	0.130	1.000 ***	—	
H*	0.416	0.208	0.314	0.376	-0.868 ***	0.142	0.941 ***	0.941 ***	—

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table S8. Elemental composition of the analysed wines (mg/L).

Wines	Na	K	Ca	Mg	P	S	Fe	Cu	Zn	Mn	B	Pb	Cr	Ni	Cd
AL14	13.34	754.79	81.87	67.95	154.23	197.91	1.48	0.08	0.57	1.34	2.23	0.008	0.056	0.0009	0.000007
AL17	14.96	667.07	72.12	68.35	121.55	231.67	0.75	0.09	0.53	1.56	1.93	0.012	0.044	0.0011	0.000002
AL19	11.34	464.33	53.68	54.71	119.17	172.81	0.58	0.08	0.46	1.38	1.97	0.016	0.044	0.0009	0.000009
AL22	8.44	436.75	49.00	53.28	104.12	128.27	0.24	0.09	0.36	1.32	1.74	0.000	0.037	0.0011	0.000011
AR06	55.29	605.95	67.87	96.76	113.91	209.19	0.66	0.53	0.71	1.70	3.48	0.052	0.049	0.0199	0.000004
AR10	35.43	527.74	46.72	81.11	138.24	138.02	0.60	0.16	0.62	1.10	3.16	0.004	0.046	0.0008	0.000001
AR11	33.52	393.87	30.93	49.68	109.28	81.99	0.37	0.13	0.47	0.64	2.17	0.017	0.049	0.0009	0.000013
AR15	37.69	471.92	66.73	91.57	147.52	176.58	0.65	0.30	0.63	1.54	2.46	0.043	0.066	0.0008	0.000007
AR17	26.22	500.19	32.53	41.01	111.69	101.02	0.40	0.87	0.29	0.89	2.19	0.034	0.048	0.0007	0.000008
PB06	17.42	751.73	49.58	67.39	199.78	190.05	0.68	0.11	0.70	1.02	4.04	0.015	0.041	0.0014	0.000409
PB10	14.08	625.62	46.95	70.06	216.26	174.11	0.42	0.08	0.48	0.88	3.94	0.004	0.044	0.0015	0.000002
PB12	15.03	708.67	53.67	70.01	237.83	223.53	0.56	0.15	0.60	0.89	3.91	0.001	0.039	0.0013	0.000006
PB15	13.03	627.09	54.92	73.64	234.42	177.28	0.69	0.09	0.45	0.73	3.78	0.014	0.036	0.0013	0.000668
PB20	13.01	658.97	53.24	69.39	208.56	216.96	0.63	0.12	0.59	0.98	3.78	0.012	0.042	0.0010	0.000006
SB13	28.76	841.25	71.81	70.65	156.29	218.96	0.61	0.07	0.58	0.70	4.12	0.007	0.042	0.0007	0.000003
SB16	61.97	1014.58	51.45	72.27	184.37	228.71	1.00	0.08	0.61	0.53	5.37	0.021	0.049	0.0008	0.000004
SB19	37.54	883.18	58.00	73.26	158.46	311.71	0.66	0.18	0.49	0.62	5.72	0.002	0.045	0.0007	0.000007
SB21	41.20	834.30	66.86	72.77	155.06	191.83	0.82	0.08	0.52	0.65	5.07	0.012	0.053	0.0006	0.000079

Table S9. Concentration of volatile molecules of the analysed wines (mg/L) (value 0 corresponds to non-detected molecules).

Molecules	AL22	AL19	AL17	AL14	AR17	AR15	AR11	AR10	AR06	PB20	PB15	PB12	PB10	PB06	SB21	SB19	SB16	SB13
3-Methylhexan-2-ol	0	1.01	0.79	0.58	0	0	0.4	0	0	0	0	0	0	0	0.52	0.3	0	0
2,3-Butane diol	0.93	1.27	0	0	0.56	0.58	0	0	0.16	0.87	0.91	0.49	0	0	0	0	0.4	0.5
4-Methyl-1-pentanol	0.07	0	0	0	0.08	0.05	0	0	0.04	0.07	0.06	0.05	0.06	0.07	0	0	0.05	0.05
2-Hexanol	0	0	0	0	0	0	0.09	0	0	0	0	0	0.15	0	0.08	0	0	0
3-Methylpentanol	0	0.16	0.2	0.25	0.09	0.09	0.1	0	0.06	0.23	0.18	0.13	0	0.11	0	0.11	0.16	0.14
Cis-3-esen-1-olo	0.2	0	0	0	0.28	0.23	0.27	0	0	0	0	0	0	0	0	0	0	0
1-Hexanol	2.52	2.72	2.72	2.87	4.28	3.95	3.85	3.05	2.13	1.73	1.82	1.65	2.04	1.92	0.86	0.96	1.11	1.77
3-Methyl-2-pentanol	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0	0	0	0
Hexadecan-2-ol	0.01	0	0	0	0	0	0	0	0.01	0.01	0.01	0	0.01	0	0	0	0	0
2,4-dimethylpentan-3-ol	0	0	0	0	0.04	0	0.03	0	0	0	0	0	0	0.03	0	0	0	0
Methanol benzene	0.03	0	0	0	1.72	0	1.09	1.04	0.11	0.11	0.07	0.1	0	0	0	0	0.08	0
2-ethylhexanol	0.03	0.05	0	0	0	0	0.03	0	0.03	0.03	0.02	0.02	0.03	0	0.05	0	0.01	0.08
1-octanol	0	0	0.17	0.33	0.08	0	0.07	0	0.05	0.04	0.03	0.04	0	0	0	0	0.08	0.04
Ethanol benzene	36.53	27.73	25.72	23.63	34.2	24.66	29.1	22.71	46.84	36.78	27.07	24.34	21.02	19.44	39.07	36.36	35.34	25.72
3-methylbutan-1-olo	0.79	0	0	0	1	0.39	1	0	0.72	1.01	0.67	0.47	0	0	0.66	0.01	0.53	1.01
Ethyl butyrate	0.14	0.76	1.29	1.48	0.98	0.13	1.02	1.12	0	0.48	0.07	0.06	0.75	0.66	0.48	0.38	0.34	1.1
Lactic acid, ethyl ester	0	1.16	1.39	1.63	0.97	1.02	0.56	0	0.53	3.68	0.36	0.37	3.94	10.36	0.74	0.48	0.35	0.98
Ethyl isovalerate	0.08	0	0	0	0	0	0.29	0	0	0.28	0.18	0	0	0.39	0	0	0	0
Isoamyl acetate	9.96	0.26	0.26	0.12	3.27	0.38	0.75	0.16	0	0.96	0.3	0.09	0.15	0	0.21	0.21	0.1	0.1
Ethyl 3-hydroxybutanoate	0.04	0.04	0	0	0	0.03	0.03	0	0	0.04	0.03	0.02	0.03	0	0	0	0.02	0.04
Methyl pentanoate	0.02	0.02	0	0	0.01	0.01	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0	0	0.01	0.01
Ethyl hexanoate	4.78	3.55	4.54	4.34	3.18	3.39	2.69	2.53	1.44	1.76	1.48	2.06	3.15	2.87	2.08	1.87	1.72	4.04
Ethyl 2-amino-3-methylbutanoate	0.04	0	0	0	0.11	0.14	0.06	0	0.07	0.05	0.06	0.07	0.07	0	0.08	0	0.05	0.18
2-methylpentyl acetate	0.74	0	0	0	0.12	1.58	0.02	0	0	0	0.01	0	0	0	0	0	0	0
Ethyl 2-furancarboxylate	0.04	0.2	0.29	0.12	0.09	0.29	0.07	0.12	0.07	0.1	0.09	0.06	0.16	0	0.1	0.09	0.06	0.3
Ethyl 2-hydroxy-4-methylvalerate	0.31	0.18	0.27	0.14	0.14	0.28	0.19	0.2	0.24	0.13	0.1	0.14	0.16	0.2	0.11	0.12	0.07	0.19
Isopentyl lactate	0.15	0.05	0	0	0.06	0	0.02	0	0.03	0.14	0.08	0.07	0.12	0.5	0	0	0.02	0
Diethyl succinate	4.49	20.85	26.56	31.3	20.52	24.66	37.26	43.06	24.76	28.62	42.62	44.12	41.22	42.86	28.28	29.55	36.11	26.82
Ethyl octanoate	2.76	1.64	1.72	1.43	1.88	1.47	1.39	1.17	0.87	1.11	0.97	1.19	1.81	1.28	0	0.86	0.93	2.23
Benzyl acetate	0.05	0	0	0	0	0.16	0.07	0	0.04	0.06	0.08	0.07	0.05	0	0.09	0	0.04	0.03
Diethyl 2-hydroxybutanedioate	0.93	11.52	6.8	5.5	1.84	6.47	1.73	0	3.06	1.9	4.18	5.48	5.29	1.22	8.09	8.13	6.85	7.35
Dimethyl, 2-hydroxy-2-mehtylbutane-1,4-dioate	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0.04	0	0	0	0	0
Isobutyl succinate	0.04	0	0	0	0	0	0.03	0	0	0	0.06	0	0.04	0.04	0	0	0	0.02
Diethyl glutarate	0.05	0.16	0.17	0.24	0.09	0.21	0.13	0.16	0.08	0.19	0.32	0.21	0.17	0.13	0.24	0	0.19	0.07
Methyl 2,2-dimethyl-6-oxoheptanoate	0.03	0	0	0	0.05	0.04	0.05	0.05	0.09	0.05	0	0.06	0.17	0.03	0	0	0.08	0.03
Ethyl 3-hydroxytridecanoate	0.21	0.18	0	0	0.05	0.24	0.13	0.13	0.13	0.13	0.16	0.18	0.1	0.06	0.1	0	0.2	0.25
Diethyl tartrate.	0.01	0.07	0	0	0	0.03	0.01	0.01	0	0	0	0.04	0.05	0.04	0	0	0.07	0
Diethyl 2-hydroxyglutarate	0.16	0.6	0.42	0.65	0.55	0.58	0.34	0.57	0.33	0.53	0.65	0.65	0.5	0.43	0.46	0.67	0.31	0.48
Ethyl decanoate	0.14	0	0	0	0.14	0.07	0.04	0	0	0.13	0.05	0.07	0.11	0.07	0	0	0.08	0.06
Ethyl 3-methylbutylbutanedioate	0.03	0.07	0	0	0.13	0.09	0.17	0.2	0.13	0.17	0.19	0.21	0.15	0.13	0.12	0	0.14	0.09
Ethyl 2-hydroxy-3-phenylpropanoate	0.23	0.23	0.24	0.23	0.24	0.27	0.25	0.2	0.28	0.36	0.25	0.35	0.25	0.28	0.2	0	0.16	0.22
Ethyl linoleate	0.06	0	0.34	0	0.04	0.09	0.08	0.19	0.2	0.07	0.11	0.17	0.17	0.2	0.18	0	0.22	0.31
Ethyl 2-amino-3-phenylpropanoate	0.04	0	0	0	0.13	0	0.04	0	0.1	0.05	0.05	0.05	0.09	0.1	0.11	0	0	0.21
Dimethyl benzene-1,3-dicarboxylate	0.03	0	0	0	0.02	0.02	0.01	0	0.01	0.02	0.02	0.01	0	0	0	0	0.02	0.03
Triethyl citrate	0	0.07	0.1	0	0	0.08	0.03	0.16	0.04	0.02	0.02	0.05	0.07	0	0.13	0.04	0.33	0.44
Methyl 4-hydroxycinnamate	0	0.11	0	0	0.09	0	0.1	0	0.08	0	0	0.11	0	0	0	0	0.11	0
Methyl 4-cyanobenzoate	0.08	0	0	0	0	0.13	0.07	0	0.01	0.07	0	0.06	0	0	0.73	0.86	0	0
Ethyl coumarate	0.24	0.63	0	0	0.55	0	0.39	0.12	0.59	0	0	0.64	0	0	0	0.73	0.45	0

Methyl palmitate	0.04	0.1	0	0	0.11	0.1	0.05	0.08	0.08	0.08	0.056	0	0.09	0	0.06	0.03	0.05	0.06
2,3-dihydroxypropyl hexadecanoate	0.06	0.12	0	0	0	0.07	0.15	0.09	0.07	0.07	0.05	0.04	0	0	0.05	0	0.04	0.11
Valeric acid, ethyl ester	0.45	0.68	0.54	0.65	0.84	1.08	0.3	0.37	0.35	0.36	0.52	0.44	0.57	0	0	0	0.14	1.13
Methyl 2,5-dihydroxybenzoate	0.09	0	0	0	0.12	0.1	0.08	0.07	0	0.01	0.01	0.01	0	0	0	0	0.03	0
Dimethyl sulphide	2.22	0	0	0	0.14	0	0.3	0	0.11	0	1.86	1.92	0	0	0.17	0	0	0.66
Methionol	0.12	0	0	0	0.14	0.03	0.11	0.13	0	0	0.11	0.15	0	0	0.16	0.1	0	0.14
Benzaldehyde	0	0	0	0	0.16	0.17	0.42	0	0	0	0	0.01	0.03	0.07	0	0	0.01	0
4-methylbenzaldehyde	0.31	0.23	0	0	0.11	0.07	0.03	0	0.07	0.01	0.08	0.11	0.11	0.23	0.14	0.11	0.05	0.13
2-propenal, 3-(2,6,6-trimethyl-1-cyclohexen-1-yl)	0.22	0.72	1.02	1.32	0.09	0.26	0.22	0.54	0.61	0.2	0.32	0.46	0.49	0.52	0.56	0.61	0.61	0.84
Isovaleraldehyde	0.03	0	0	0	0	0	0	0	0.11	0.04	0.07	0.1	0.13	0	0.07	0	0.08	0.14
Valeric acid	0.13	0	0	0	0	0.43	0.24	0	0.16	0.14	0.16	0.17	0	0.25	0	0	0.07	0
Cystathionine	0	0.12	0	0	0	0.04	0.04	0	0.07	0.02	0.04	0.07	0	0	0	0	0.09	0.1
Tryptophane	0	0.03	0	0	0	0	0.11	0	0	0	0.01	0.02	0	0	0	0.07	0.04	0
3-hydroxy-2-pentanone	0.04	0.05	0	0	0	0	0	0	0.03	0.04	0.03	0.02	0.04	0	0	0	0.03	0.04
3-acetyl-2,4-dimethylpyrrole	0.02	0	0	0	0	0.03	0.07	0	0.04	0.01	0.02	0.04	0	0	0	0	0.03	0
2-tetradecylbenzeneacetic acid	0.04	0	0	0	0	0	0.06	0	0.05	0.08	0.04	0.03	0.06	0	0	0	0	0.07
Campholonic acid	0	0	0	0	0	0	0	0	0	0	0	0.02	0	0	0	0	0.09	0.28
Diethyl-2-hydroxy-2-methylbutanedioic acid	4.08	0	0.29	0.23	0.7	0.08	0.1	0	0.06	0.25	0.09	0.13	0.16	0.25	0.13	0	0.24	0
Palmitic acid	0.02	0.03	0	0	0	0.03	0.25	0.03	0.02	0.03	0.02	0.01	0	0	0.02	0	0.01	0.04
3-methylbutanoic acid	0.15	0	0	0	0.31	0.37	0.31	0	0.25	0	0.22	0.22	0.36	0	0	0.34	0.23	0.46
Oleanolic acid	0	0.03	0	0	0	0.03	0.09	0	0.03	0.03	0.02	0	0	0	0	0	0.01	0.05
Stearic acid	0.03	0.04	0	0	0	0.07	0.04	0	0.02	0.02	0.01	0.01	0	0	0.01	0	0	0
Caprylic acid	2.5	1.67	1.01	0.56	0.33	0.22	0.65	0.38	0.42	0.61	0.42	0.46	0.45	0.22	0.38	0.43	0.62	0.96
Caprylic acid	1	0.04	0.43	0	0.19	0.02	0.18	0.17	0.11	0.22	0.17	0.18	0.43	0	0.28	0	0.12	0.44
2-methoxy-4-vinylphenol	0.32	0.06	0	0	0	0.08	0.03	0	0.02	0.02	0.02	0.03	0	0	0	0	0.05	0.05
Tyrosol	0.07	0.08	0	0	0	0	0.02	0	0.08	0.01	0.04	0.08	0	0.01	0.07	0	0.08	0.04
3,5-dimethylphenol	0	0	0	0	0	0	0.02	0	0	0	0	0	4.31	0	0	0	0.03	0
3,4-dimethylphenol	9.72	6.7	7.05	6.6	6.94	7.08	4.7	4.92	5.32	4.18	5.5	4.7	0	0	4	4.74	4.55	6.19
2,5-dimethylphenol	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0	4.48	0	0	0	0
Linalool	0.06	0.12	0	0	0	0.08	0	0	0.05	0.4	0.03	0.04	0.04	0	0	0	0.08	0.1
Vitispirane	0.03	0.15	0.14	0.23	0	0.03	0.06	0.17	0.17	0.01	0	0.01	0	0	0	0	0.08	0.11
Ascaridole	0.05	0.04	0	0	0.05	0	0.04	0	0.06	0	0	0.02	0	0	0	0	0.02	0.03
Curvulol	0.04	0	0	0	0.06	0.04	0.03	0	0	0.02	0.02	0.02	0.02	0	0	0	0.07	0.08
4-nitrophthalimide	0	0	0	0	0	0	0.01	0	0	0	0	0	0.01	0	0	0	0	0.02
Gamma-undecalactone	0.01	0	0	0	0	0.03	0.02	0	0	0.03	0.06	0	0	0	0	0	0.07	0.21
2-ethyl-1-[(4-methylphenyl) sulfonyl] azetidin-3-one	0.17	0	0	0	0.17	0.09	0.04	0	0.07	0.07	0.13	0.16	0	0	0.06	0	0.07	0.12
5,7-dimethoxy-2,2-dimethylchromene	7.52	0	7.33	7.32	6.73	7.55	4.79	4.35	4.21	5.77	4.4	4.24	5.12	4.68	4.91	4.41	3.69	6.72
6-chloro-n-ethyl-1,3,5-triazine-2,4-diamine	0.03	0.05	0	0	0.05	0.05	0.04	0	0	0.04	0.03	0.04	0	0	0.05	0	0.03	0.09
Dihydroxy vitamin d2	0	0	0	0	0	0.07	0.04	0	0	0	0.01	0	0	0	0.04	0	0.05	0
1,3,5-cycloheptatriene-1-methanol	0	0	0	0	0	0	0.07	0	0	0.01	0	0	0	0	0	0	0	0

Table S10. Pearson correlation coefficients between wine age and volatile molecules analysed by GC-MS using a polar column.

Chemical families	Volatile molecules <sup>a</sup>	Alvarinho	Arinto	Pinot Bianco	Sauvignon Blanc
Alcohols	2,3-Butanediol	-0.760	-0.764	-0.886*	0.951*
	3-Methylpentanol	0.952*	-0.464	-0.731	0.804
	1-Hexanol	0.965*	-0.933*	0.554	0.931
	Ethanol benzene	-0.936	0.474	-0.966**	-0.927
Esters	3-methylbutan-1-ol	-0.792	-0.198	-0.954*	0.566
	Ethyl butyrate	0.970*	-0.288	0.383	0.707
	Ethyl hexanoate	-0.143	-0.938*	0.779	0.724
	Ethyl octanoate	-0.873	-0.961**	0.490	0.946
	<b>Isoamyl acetate</b>	<b>-0.800</b>	<b>-0.743</b>	<b>-0.909*</b>	<b>-0.907</b>
	<b>Diethyl succinate</b>	<b>0.957*</b>	<b>0.393</b>	<b>0.761</b>	<b>0.032</b>
	Diethyl glutarate	0.971*	-0.309	-0.498	-0.317
	Ethyl decanoate	-0.792	-0.912*	0.421	0.820
	Methyl 2,2-dimethyl-6-oxoheptanoate	-0.792	0.783	0.225	0.574
	<b>Ethyl linoleate</b>	<b>0.061</b>	<b>0.870</b>	<b>0.973**</b>	<b>0.671</b>
	Dimethyl benzene-1,3-dicarboxylate	-0.792	-0.705	-0.901*	0.968*
	2,3-dihydroxypropyl hexadecanoate	-0.621	0.500	-0.935*	0.691
	Methyl 2,5-dihydroxybenzoate	-0.792	-0.956*	-0.796	0.238
Aldehydes	4-methylbenzaldehyde	-0.914	-0.502	0.957*	-0.242
	<b>2-propenal, 3-(2,6,6-trimethyl-1-cyclohexen-1-yl)</b>	<b>0.992*</b>	<b>0.884*</b>	<b>0.963**</b>	<b>0.884</b>
Ketones	3-hydroxy-2-pentanone	-0.791	0.750	-0.714	0.959*
Acids	Palmitic acid	-0.726	0.153	-0.960**	0.599
	Oleanolic acid	-0.198	0.236	-0.905*	0.900
	Caprinic acid	-0.988*	0.445	-0.892*	0.970*
	Stearic acid	-0.768	-0.148	-0.941*	-0.714
Phenols	3,4-dimethylphenol	-0.811	-0.778	-0.734	0.887
	5,7-dimethoxy-2,2-dimethylchromene	0.175	-0.880*	-0.501	0.519
Terpenes	Linalool	-0.621	0.053	-0.823	0.951*
Terpenoids	Ascaridole	-0.904	0.245	0.064	0.968*
Tetrahydrofurans	Vitispirane	0.951*	0.904*	-0.589	0.962*
Other	Curvulol	-0.792	-0.922*	-0.700	0.936

<sup>a</sup> Bold font indicates that molecules were used in Multifactorial Analysis.

\* p &lt; .05, \*\* p &lt; .01.

Figure S3. Projection plan of the set of variables in the Multiple Factorial Analysis, when age perception was used as one of the sets of variables.

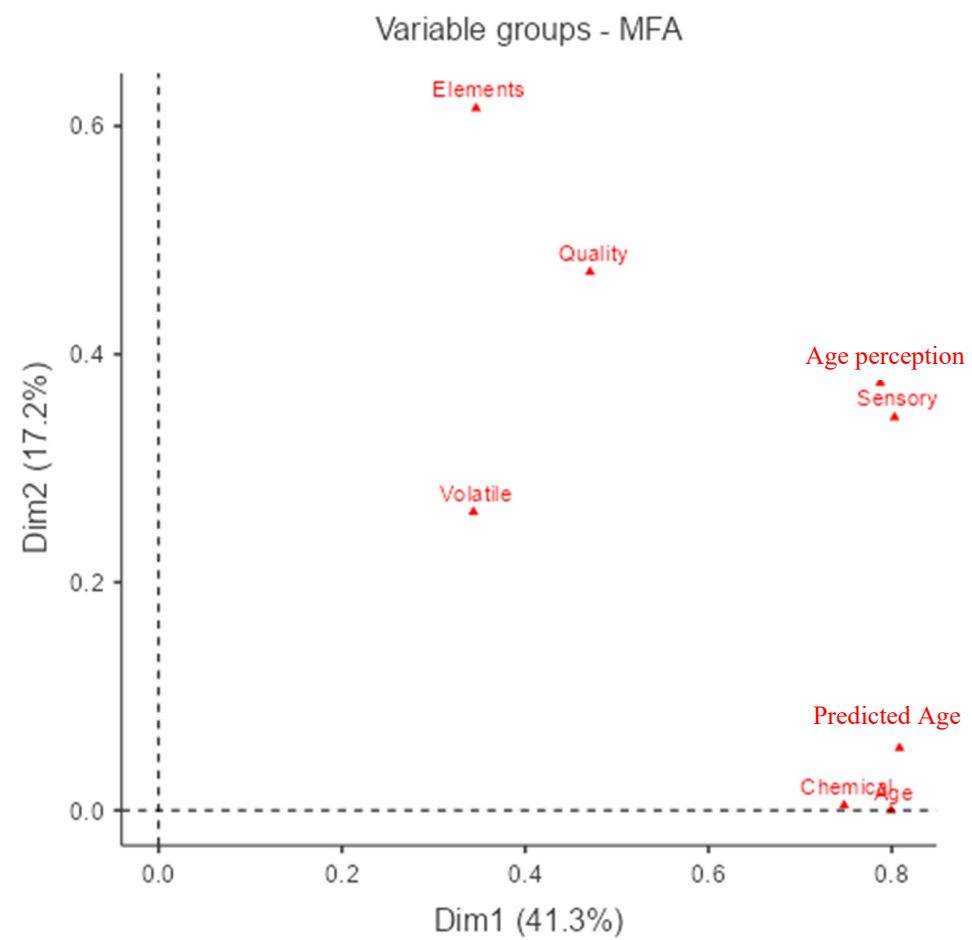
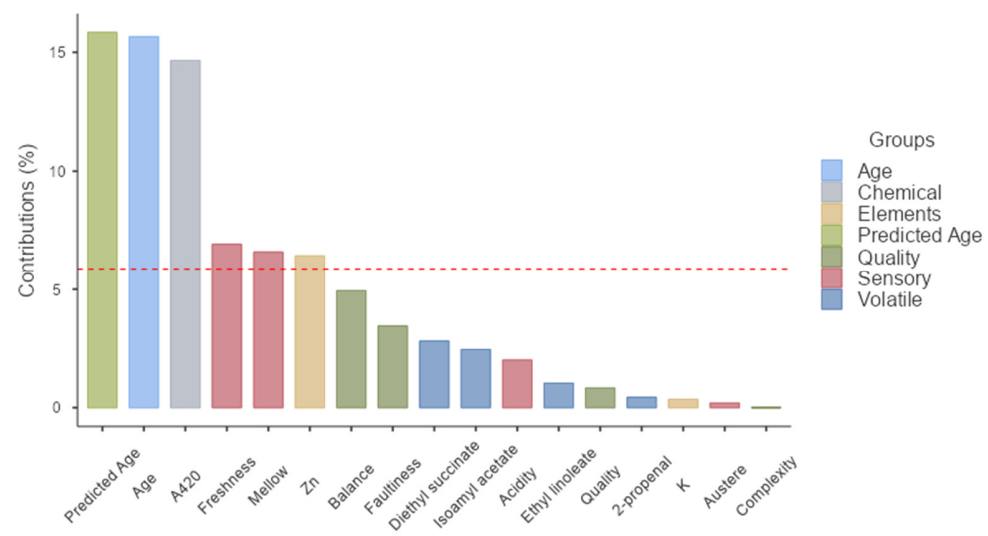


Figure S4. Contribution of quantitative variables to dimensions 1 (a) and 2 (b). The expected average contribution is indicated by a dashed red line.

(a)



(b)

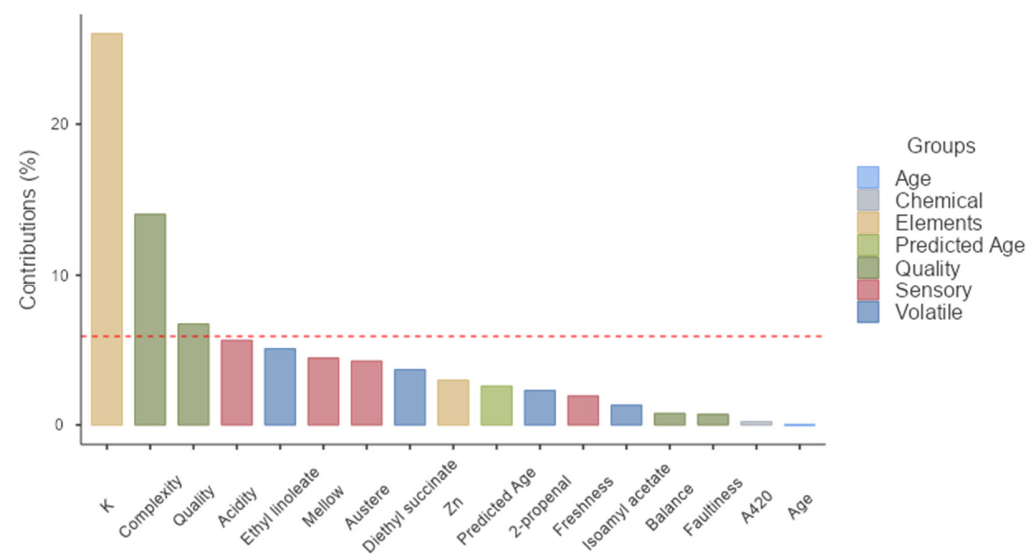


Figure S5. Projection plan of the set of variables in the Multiple Factorial Analysis, when grape was used as one of the sets of variables.

