SUPPLEMENTARY DATA
Miliordos, D. E., Kontoudakis, N., Kouki, A., Kanapitsas, A., Lola, D., Goulioti, E., & Kotseridis, Y. Influence of vintage and grape maturity on volatile composition and foaming properties of sparkling wine from Savvatiano (Vitis vinifera L.) variety. *OENO One*, *59*(1). https://doi.org/10.20870/oeno-one.2025.59.1.8217

SUPPLEMENTARY DATA

Table S1. Concentration of volatile compounds in sparkling wines (mg/L) of Savvatiano variety of the 2019 growing seasons.

2019	1st maturity			2nd maturity			3rd maturity		
Alcohols									
2-Methyl-1-propanol	42.0	±	2.40a	56.7	±	3.85b	44.4	±	0.60a
Isoamyl alcohol	181	±	63a	213	±	14a	221	±	5a
Methionol	0.40	±	0.04a	0.86	±	0.16b	0.46	±	0.01a
2-Phenyl ethanol	39.7	±	1.70a	41.3	±	2.28a	58.3	±	1.19b
TOTAL ALCOHOLS	262	±	67a	312	±	18a	324	±	5a
Ethyl Esters									
Ethyl octanoate	1.3	±	0.43a	3.1	±	0.44b	5.3	±	1.40c
Ethyl hexanoate	1.0	±	0.14a	0.7	±	0.06b	1.4	±	0.08c
Ethyl decanoate	0.7	±	0.06a	0.8	±	0.04a	1.0	±	0.05b
Ethyl butyrate	0.14	±	0.01a	0.16	±	0.02a	0.27	±	0.02b
Ethyl- 2- methyl- butyrate	0.11	±	0.01a	0.16	±	0.01b	0.12	±	0.01a
Ethyl- 3- methyl- butyrate	0.18	±	0.01a	0.23	±	0.02b	0.17	±	0.02a
TOTAL ETHYL ESTERS	**3.46**	**±**	**0.46c**	**5.05**	**±**	**0.39b**	**8.19**	**±**	**1.54a**
Acetates									
Isoamyl acetate	0.16	±	0.02a	0.35	±	0.03b	0.78	±	0.08c
2-Phenyl ethyl acetate	0.19	±	0.01a	0.22	±	0.02a	0.69	±	0.06c
Hexyl acetate	0.94	±	0.11a	0.94	±	0.07a	0.60	±	0.07b
TOTAL ACETATES	**1.28**	**±**	**0.12b**	**1.51**	**±**	**0.06b**	**2.07**	**±**	**0.08a**
Acids									
Isovaleric acid	1.33	±	0.15a	2.03	±	0.05b	2.05	±	0.18b
Butyric acid	0.42	±	0.12a	0.46	±	0.06a	0.73	±	0.08b
Isobutyric acid	0.11	±	0.01a	0.11	±	0.01a	0.08	±	0.01a
Hexanoic acid	2.03	±	0.28a	1.31	±	0.05b	3.17	±	0.17c
TOTAL ACIDS	**3.89**	**±**	**0.27b**	**3.91**	**±**	**0.10b**	**6.02**	**±**	**0.15a**
Terpenes									
Linalool	0.015	±	0.001a	0.017	±	0.002a	0.015	±	0.001a
Nerol	0.017	±	0.001a	0.016	±	0.001a	0.016	±	0.001a
TOTAL TERPENES	**0.031**	**±**	**0.008a**	**0.033**	**±**	**0.008a**	**0.031**	**±**	**0.001a**

Different Latin letters indicate statistically significant differences between different maturity levels of the same year (Tuckey's HSD test, $p < 0.05$).

SUPPLEMENTARY DATA
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Table S2. Concentration of volatile compounds in sparkling wines (mg/L) of Savvatiano variety of the 2020 growing seasons.

2020	1st maturity			2nd maturity			3rd maturity		
Alcohols									
2-Methyl-1-propanol	43.9	±	1.74a	39.9	±	6.06a	44.4	±	5.56a
Isoamyl alcohol	188	±	26a	167	±	10a	187	±	17a
Methionol	0.80	±	0.02a	0.75	±	0.07ab	0.68	±	0.03b
2-Phenyl ethanol	36.5	±	9.23ab	28.6	±	1.35b	36.9	±	1.09a
TOTAL ALCOHOLS	**269.32**	**±**	**37.15a**	**236.01**	**±**	**16.89a**	**268.69**	**±**	**22.62a**
Ethyl Esters									
Ethyl octanoate	3.6	±	0.82a	1.9	±	0.56b	1.9	±	0.29b
Ethyl hexanoate	1.1	±	0.04a	0.8	±	0.07b	0.8	±	0.16b
Ethyl decanoate	0.9	±	0.25ab	0.7	±	0.16a	1.1	±	0.13b
Ethyl butyrate	0.33	±	0.04a	0.16	±	0.03b	0.21	±	0.05b
Ethyl- 2- methyl- butyrate	0.10	±	0.01a	0.10	±	0.01a	0.09	±	0.01a
Ethyl- 3- methyl- butyrate	0.14	±	0.01a	0.14	±	0.04a	0.12	±	0.01a
TOTAL ETHYL ESTERS	**6.08**	**±**	**1.03a**	**3.72**	**±**	**0.82b**	**4.24**	**±**	**0.57b**
Acetates									
Isoamyl acetate	0.90	±	0.17a	0.39	±	0.16b	0.69	±	0.06c
2-Phenyl ethyl acetate	0.87	±	0.07a	0.36	±	0.05b	0.64	±	0.05c
Hexyl acetate	0.46	±	0.05a	0.65	±	0.05b	0.75	±	0.02b
TOTAL ACETATES	**2.22**	**±**	**0.18a**	**1.39**	**±**	**0.20b**	**2.07**	**±**	**0.07a**
Acids									
Isovaleric acid	1.48	±	0.22a	1.92	±	0.09b	1.79	±	0.05b
Butyric acid	0.46	±	0.02a	0.44	±	0.01a	0.42	±	0.02a
Isobutyric acid	0.08	±	0.02a	0.07	±	0.01a	0.08	±	0.01a
Hexanoic acid	1.64	±	0.46ab	1.55	±	0.18a	1.07	±	0.14b
TOTAL ACIDS	**3.65**	**±**	**0.23ab**	**3.98**	**±**	**0.21a**	**3.36**	**±**	**0.18b**
Terpenes									
Linalool	0.021	±	0.002a	0.014	±	0.001b	0.012	±	0.001b
Nerol	0.017	±	0.001a	0.017	±	0.0001a	0.018	±	0.001a
TOTAL TERPENES	**0.038**	**±**	**0.002a**	**0.031**	**±**	**0.001b**	**0.030**	**±**	**0.001b**

Different Latin letters indicate statistically significant differences between different maturity levels of the same year (Tuckey's HSD test, $p < 0.05$).

Table S3. Odor activity values (OAVs) for the aroma compounds in wines produced 2019.

Compound	Sensory Descriptor	Reference	Threashold (mg/L)	OAV		
				1st maturity	2nd maturity	3rd maturity
Alcohols						
2-Methyl-1-propanol	wine, solvent, bitter	Ferreira, *et al*., 2000	40	1.05	1.42	1.11
Isoamyl alcohol	whiskey, malt, burnt	Guth, *et al*., 1997,	30	6.02	7.11	7.36
Methionol	sweet, potato	Ferreira, *et al*.,2000	1	0.40	0.86	0.46
2-Phenyl ethanol	honey, spice, rose, lilac	Ferreira, *et al*., 2000	14	2.85	2.95	4.16
Ethyl esters						
Ethyl octanoate	fruit, fat	Ferreira, *et al*., 2000	0.005	260	620	1060
Ethyl hexanoate	apple peel, fruit	Ferreira, *et al*., 2000	0.014	71	50	100
Ethyl decanoate	grape	Ferreira, *et al*., 2000	0.2	3.5	4	5
Ethyl butyrate	apple	Ferreira, *et al*., 2000	0.02	7	8	13.5
Ethyl- 2- methyl-butyrate	apple	Ferreira, *et al*., 2000	0.018	6.1	8.9	6.7
Ethyl- 3- methyl-butyrate	fruit	Ferreira, *et al*., 2000	0.03	6.0	7.7	5.7
Acetates						
Isoamyl acetate	banana	Ferreira, *et al*., 2000	0.03	5.3	11.7	26
2-Phenyl ethyl acetate	rose, honey, tobacco	Guth, *et al*., 1997,	0.25	0.76	0.88	2.76
Hexyl acetate	fruit, herb	Etievant, *et al*., 1991	1.5	0.63	0.63	0.40
Acids						
Isovaleric acid	sweat	Ferreira, *et al*., 2000,	0.42	3.2	4.8	4.9
Butyric acid	rancid, butter, cheese	Ferreira, *et al*., 2000,	8.1	0.05	0.06	0.09
Isobutyric acid	rancid, cheese, sweat	Ferreira, *et al*., 2000	0.173	0.64	0.64	0.46
Hexanoic acid	sweat, acid, rancid	Ferreira, *et al*., 2000	0.033	61.5	40	96
Terpenes						
Linalool	flower, lavender	Ferreira, *et al*., 2000	0.025	0.60	0.68	0.60
Nerol	rose, geranium	Escudero, *et al*., 2004	0,036	0,47	0,47	0,44

OAVs are expressed as the mean concentration of an aroma compound divided by its odor threshold value.

Table S4. Odor activity values (OAVs) for the aroma compounds in wines produced 2020.

Compound	Sensory Descriptor	Reference	Threashold (mg/L)	OAV		
				1st maturity	2nd maturity	3rd maturity
Alcohols						
2-Methyl-1-propanol	wine, solvent, bitter	Ferreira, *et al.*, 2000	40	1.10	1.00	1.11
Isoamyl alcohol	whiskey, malt, burnt	Guth, *et al.*,1997	30	6.3	5.6	6.2
Methionol	sweet, potato	Ferreira, *et al.*, 2000	1	0.80	0.75	0.68
2-Phenyl ethanol	honey, spice, rose, lilac	Ferreira, *et al.*, 2000	14	2.6	2.0	2,63571
Ethyl esters						
Ethyl octanoate	fruit, fat	Ferreira, *et al.*, 2000	0.005	720	380	380
Ethyl hexanoate	apple peel, fruit	Ferreira, *et al.*, 2000	0.014	78	57	57
Ethyl decanoate	grape	Ferreira, *et al.*, 2000	0.2	4.5	3.5	5.5
Ethyl butyrate	apple	Ferreira, *et al.*, 2000	0.02	16.5	8.0	10.5
Ethyl- 2- methyl-butyrate	apple	Ferreira, *et al.*, 2000	0.018	5.6	5.6	5.0
Ethyl- 3- methyl-butyrate	fruit	Ferreira, *et al.*, 2000	0.03	4.7	4.7	4.0
Acetates						
Isoamyl acetate	banana	Ferreira, *et al.*, 2000	0.03	30	13	23
2-Phenyl ethyl acetate	rose, honey, tobacco	Guth, *et al.*, 1997,	0.25	3.48	1.44	2.56
Hexyl acetate	fruit, herb	Etievant, *et al.*, 1991	1.5	0.3	0.4	0.5
Acids						
Isovaleric acid	sweat	Ferreira, *et al.*, 2000	0.42	3.5	4.6	4.3
Butyric acid	rancid, butter, cheese	Ferreira, *et al.*, 2000	8.1	0.057	0.054	0.052
Isobutyric acid	rancid, cheese, sweat	Ferreira, *et al.*, 2000	0.173	0.46	0.41	0.46
Hexanoic acid	sweat, acid, rancid	Ferreira, *et al.*, 2000	0.033	50	47	32
Terpenes						
Linalool	flower, lavender	Ferreira, *et al.*, 2000	0.025	0.84	0.56	0.48
Nerol	rose, geranium	Escudero, *et al.*, 2004	0.036	0.47	0.47	0.50

OAVs are expressed as the mean concentration of an aroma compound divided by its odor threshold value.

Table S5. The Kruskal–Wallis test and, when significant, ($p < 0.05$) the Mann–Whitney–Wilcoxon Test were applied for multiple comparisons to the results of the sensory scores for the experimental sparkling wines produced by the different maturities in 2019 vintage.

2019	Kruskal–Wallis test *p*-value	Post-hoc Mann–Whitney–Wilcoxon test		
		1st maturity	2nd maturity	3rd maturity
Colour intensity	3.43x 10^{-6}	c	a	b
Foam intensity	0.284			
Foam quality	0.03	a	b	a
Citrus	0.253			
Tropical fruits	0.444			
Green apple	0.006	a	ab	b
Yeast aroma	0.981			
Buttery taste	0.316			
Acidity	2.89 x 10-6	a	b	b
Aftertaste	0.0007	b	b	a

Test statistics; the Kruskal–Wallis test was statistically significant when $p < 0.05$. Different letters in each row indicate significant differences ($p < 0.05$) among different samples.

Table S6. The Kruskal–Wallis test and, when significant, ($p < 0.05$) the Mann–Whitney–Wilcoxon Test were applied for multiple comparisons to the results of the sensory scores for the experimental sparkling wines produced by the different maturities in 2020 vintage.

2020	Kruskal–Wallis test *p*-value	Post-hoc Mann–Whitney–Wilcoxon test		
		1st maturity	2nd maturity	3rd maturity
Colour intensity	0.005	b	a	b
Foam intensity	0.611			
Foam quality	0.505			
Citrus	0.453			
Tropical fruits	0.0007	b	a	a
Green apple	0.0002	a	b	b
Yeast aroma	0.721			
Buttery taste	0.077			
Acidity	0.0008	a	b	b
Aftertaste	0.00005	b	a	a

Test statistics; the Kruskal–Wallis test was statistically significant when $p < 0.05$. Different letters in each row indicate significant differences ($p < 0.05$) among different samples.