

Supplementary data for article:

Pantelić, M. M.; Zagorac, D. Č. D.; Ćirić, I. Ž.; Pergal, M. V.; Relić, D. J.; Todić, S. R.; Natić, M. M. Phenolic Profiles, Antioxidant Activity and Minerals in Leaves of Different Grapevine Varieties Grown in Serbia. *Journal of Food Composition and Analysis* **2017**, *62*, 76–83. <https://doi.org/10.1016/j.jfca.2017.05.002>

Table S1

List of quantified phenolics in grapevine leaf samples in negative ionization mode with mean expected retention time (t_R , min), mass of parent ion (m/z), masses of product ions (m/z) with specified collision energy (eV), correlation coefficient, limit of detection (LOD) and quantification (LOQ), and recovery at two concentration levels, as determined using UHPLC-DAD MS/MS analysis.

t_R , min	Phenolic compound	Parent Ion, m/z	Product Ion, m/z (Collision Energy, eV)	R^2	LOD, mg/L	LOQ, mg/L	Recovery (%)	
							Level 1	Level 2
1.98	Gallic acid	169.032	79.11(31); 125.04(16)	0.9911	0.16	0.55	29.21	36.99
3.87	Gallocatechin	305.120	125.22(27); 179.19(17)	0.9996	0.03	0.10	91.73	105.84
3.98	Protocatechuic acid	153.013	108.09(23); 109.10(14)	0.9980	0.10	0.34	102.83	67.59
4.89	Aesculin	339.080	133.09(44); 177.06(25)	0.9999	0.01	0.05	90.18	74.76
5.07	Epigallocatechin	305.110	125.22(27); 179.19(17)	0.9999	0.01	0.02	96.03	112.28
5.08	<i>p</i>-Hydroxybenzoic acid	137.057	93.19(19); 108.33(22)	0.9934	0.14	0.48	99.55	101.07
5.18	Gentisic acid	153.003	108.07(5); 109.10(15)	0.9998	0.02	0.06	51.49	58.66
5.23	Chlorogenic acid	353.103	191.28(25)	0.9980	0.08	0.27	115.57	109.31
5.25	Catechin	289.094	203.00(23); 245.03(31)	0.9953	0.14	0.45	111.28	104.88
5.51	Caffeic acid	179.004	134.00(13); 135.00(16)	0.9951	0.11	0.38	111.37	110.56
5.82	Gallocatechin gallate	457.146	161.08(25); 359.23(16)	0.9930	0.07	0.22	84.53	66.80
5.75	Epicatechin	289.084	203.00(23); 245.03(31)	0.9991	0.06	0.19	84.26	88.94
6.04	Rutin	609.197	299.98(42); 301.20(32)	0.9976	0.09	0.31	87.85	75.27
6.07	Ellagic acid	300.980	284.00(32); 300.04(30)	0.9938	0.11	0.37	60.10	58.61
6.15	<i>p</i>-Coumaric acid	163.031	93.12(39); 119.09(16)	0.9947	0.12	0.41	110.67	116.87
6.55	Ferulic acid	193.057	134.00(18); 178.00(15)	0.9933	0.15	0.50	101.12	95.11
6.81	Epigallocatechin gallate	457.156	161.08(25); 359.23(16)	0.9928	0.15	0.51	70.29	73.37
7.45	<i>trans</i>-Resveratrol	227.060	143.18 (22); 185.04 (22)	0.9902	0.14	0.47	80.96	126.62
7.58	Quercetin	301.026	151.01(22); 179.00(20)	0.9978	0.08	0.27	110.98	97.91
8.19	Kaempferol	285.074	211.00(32); 227.00(32)	0.9961	0.04	0.13	95.26	85.53

Table S2. Correlation coefficients among polyphenols (1-20), total phenolic contents (21) and radical scavenging activity (22) in leaves from Belgrade vineyard area^a

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	0.79	0.79	0.42	0.47	-0.12	0.68	0.59	0.87	0.26	0.60	0.56	-0.45	0.06	0.08	0.30	-0.60	-0.52	0.44	-0.26	-0.01	-0.17
	2	0.55	0.57	0.17	-0.41	0.82	0.62	0.82	0.32	0.70	0.53	-0.40	-0.16	-0.03	0.34	-0.54	-0.24	0.55	-0.28	-0.12	-0.29
		3	0.42	0.52	-0.14	0.44	0.14	0.64	-0.09	0.32	0.49	-0.79	0.07	-0.29	0.48	-0.46	-0.41	0.28	-0.33	-0.37	-0.41
			4	-0.22	-0.43	0.64	0.32	0.68	0.25	0.54	0.33	-0.27	-0.10	-0.04	0.46	-0.25	-0.05	0.35	-0.15	-0.10	-0.27
				5	0.07	0.10	-0.02	0.31	0.13	0.19	0.54	-0.24	0.07	-0.12	0.14	-0.01	-0.37	0.41	-0.22	-0.13	-0.17
					6	-0.41	-0.24	-0.35	0.11	-0.08	-0.02	0.30	-0.20	0.31	-0.28	0.31	-0.27	-0.11	0.16	0.30	0.35
						7	0.63	0.85	0.55	0.87	0.61	-0.28	0.03	0.06	0.44	-0.23	0.11	0.71	-0.05	0.06	-0.19
							8	0.67	0.54	0.62	0.40	0.08	0.02	0.47	-0.13	-0.36	-0.32	0.44	-0.04	0.21	0.06
								9	0.51	0.75	0.62	-0.32	0.12	0.03	0.37	-0.35	-0.31	0.61	-0.23	0.07	-0.13
									10	0.80	0.67	0.27	0.11	0.51	0.06	0.24	0.00	0.74	0.11	0.59	0.39
										11	0.83	-0.09	-0.12	0.34	0.36	-0.11	-0.02	0.88	0.04	0.26	-0.02
											12	-0.31	-0.17	0.20	0.35	-0.07	-0.21	0.91*	-0.17	0.02	-0.18
												13	-0.10	0.36	-0.44	0.44	0.12	-0.08	0.43	0.55	0.51
													14	0.13	0.15	-0.04	0.28	-0.23	0.28	0.51	0.56
														15	-0.40	-0.21	-0.11	0.08	0.49	0.64	0.60
															16	-0.10	0.31	0.45	-0.29	-0.09	-0.32
																17	0.34	0.12	0.06	0.08	0.10
																	18	0.00	0.45	0.19	0.15
																		19	-0.18	0.07	-0.21
																			20	0.58	0.66
																				21	0.93*
																					22

^ap values: p<0.01, p<0.001, p<0.0001, *p<0.00001.

Table S3. Correlation coefficients among polyphenols (1-20), total phenolic contents (21) and radical scavenging activity (22) in leaves from Mlava vineyard area^a

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
1	0.80	0.48	0.65	0.43	-0.58	0.71	0.30	-0.01	0.30	0.56	-0.22	-0.39	0.47	-0.17	0.22	-0.52	-0.65	-0.29	0.15	0.42	0.63	
	2	0.40	0.62	0.04	-0.38	0.75	0.54	0.22	0.39	0.90	0.19	-0.54	0.30	0.17	0.31	-0.54	-0.84	0.12	0.26	0.71	0.83	
		3	-0.08	-0.31	0.36	0.08	-0.33	-0.28	-0.37	0.31	0.20	-0.45	-0.20	0.32	0.02	-0.58	-0.57	0.45	-0.61	0.53	0.55	
			4	0.55	-0.75	0.82	0.79	-0.26	0.41	0.36	-0.14	-0.13	0.80	-0.31	0.51	-0.31	-0.41	-0.24	0.27	0.47	0.61	
				5	-0.75	0.32	0.12	-0.03	0.05	-0.25	-0.73	0.54	0.68	-0.39	0.36	0.16	0.34	-0.84	0.22	-0.34	-0.16	
					6	-0.77	-0.63	-0.16	-0.44	-0.09	0.64	0.05	-0.53	0.68	-0.42	0.25	0.15	0.78	-0.69	0.16	-0.06	
						7	0.81	0.07	0.32	0.46	-0.28	-0.49	0.33	-0.41	0.62	-0.71	-0.66	-0.25	0.50	0.38	0.54	
							8	0.00	0.56	0.42	0.05	-0.39	0.40	-0.37	0.44	-0.37	-0.49	-0.05	0.59	0.41	0.47	
								9	0.21	0.34	-0.16	-0.03	-0.39	0.16	0.01	0.07	-0.01	-0.29	0.66	-0.34	-0.30	
									10	0.55	0.27	-0.38	0.42	-0.27	-0.42	0.16	-0.37	-0.16	0.65	0.19	0.29	
										11	0.52	-0.57	0.17	0.39	-0.04	-0.28	-0.80	0.34	0.25	0.72	0.78	
											12	-0.31	-0.04	0.62	-0.45	0.19	-0.35	0.88	-0.32	0.68	0.52	
												13	0.29	0.22	0.13	0.72	0.89	-0.34	-0.24	-0.48	-0.53	
													14	-0.12	0.12	0.25	0.00	-0.29	0.02	0.31	0.41	
														15	-0.07	0.28	-0.01	0.63	-0.50	0.43	0.28	
															16	-0.51	-0.09	-0.17	0.08	0.13	0.16	
																17	0.74	-0.11	-0.07	-0.37	-0.46	
																	18	-0.37	-0.14	-0.75	-0.83	
																		19	-0.54	0.69	0.49	
																			20	-0.31	-0.18	
																				21	0.97	
																					22	

^a*p* values: $p < 0.05$, $p < 0.01$, $p < 0.0005$.

Table S4. Content of microelements and macroelements in the leaves from Belgrade and Mlava vineyard areas.

	<i>Radmilovac</i>											<i>Petrovac na Mlavi</i>										
	<i>CSa</i>	<i>Mer</i>	<i>CFr</i>	<i>San</i>	<i>Shi</i>	<i>PNo</i>	<i>Pro</i>	<i>Gam</i>	<i>Rie</i>	<i>Pet</i>	<i>SBl</i>	<i>Wel</i>	<i>PGr</i>	<i>Cha</i>	<i>PBl</i>	<i>Vra</i>	<i>MHa</i>	<i>Plo</i>	<i>Žup</i>	<i>Cmu</i>	<i>Bbe</i>	<i>Sme</i>
K(23)^a	3.14 ⁱ	2.76 ^j	3.72 ^s	2.59 ^m	2.64 ^m	3.99 ^f	3.04 ⁱ	3.84 ^s	4.79 ^e	3.09 ⁱ	3.09 ⁱ	2.30 ⁿ	3.37 ^h	2.62 ^m	2.85 ^k	6.14 ^b	6.77 ^a	5.18 ^d	4.70 ^e	5.81 ^c	5.25 ^d	5.62 ^c
Ca(24)	37.7 ^z	44.1 ^b	24.0 ^m	36.3 ^h	35.8 ^h	39.7 ^e	38.9 ^f	40.7 ^e	46.3 ^a	42.9 ^c	40.2 ^e	37.0 ^s	41.2 ^d	37.8 ^s	44.6 ^b	29.8 ^k	31.0 ^j	34.0 ⁱ	29.2 ^l	28.9 ^j	37.7 ^z	22.7 ⁿ
Na(25)	13.9	19.2 ^f	11.9 ^m	13.8 ^l	20.2 ^e	16.8 ⁱ	19.8 ^e	20.0 ^e	28.6 ^b	16.5 ^j	17.0 ⁱ	16.9 ⁱ	18.8 ^z	15.7 ^k	17.8 ^h	22.5 ^d	18.8 ^z	18.4 ^h	45.5 ^a	16.8 ^j	16.7 ⁱ	24.1 ^c
B(26)	22.7 ^h	26.6 ^c	18.9 ^f	22.1 ⁱ	19.5 ^k	24.8 ^f	23.6 ^s	37.9 ^b	20.8 ^j	41.3 ^a	24.7 ^f	25.1 ^e	16.1 ⁿ	25.4 ^d	22.0 ^j	15.3 ^o	11.9 ^y	9.36 ^t	15.4 ^o	12.9 ^p	18.1 ^m	10.1 ^r
Mg(27)	5.05 ^b	4.00 ^f	3.81 ^s	4.41 ^d	4.16 ^e	4.19 ^e	4.97 ^b	5.21 ^a	4.01 ^l	4.97 ^b	4.97 ^b	4.75 ^c	4.99 ^b	4.42 ^d	4.98 ^b	3.21 ^k	3.40 ^j	2.87 ^l	2.83 ^l	3.67 ^h	3.24 ^k	3.55 ⁱ
S(28)	3.42 ^a	2.82 ^d	2.45 ^{sh}	2.24 ⁱ	2.54 ^f	2.66 ^e	2.85 ^d	2.83 ^d	3.50 ^a	2.95 ^c	3.32 ^b	3.20 ^b	2.57 ^f	2.47 ^{fs}	2.69 ^e	2.40 ^h	2.48 ^{fs}	2.67 ^e	1.74 ^j	2.28 ⁱ	3.00 ^f	1.79 ^j
P(29)	0.167 ^e	0.296 ^b	0.248 ^c	0.151 ^f	0.163 ^f	0.196 ^d	0.139 ^s	0.185 ^d	0.206 ^d	0.209 ^d	0.278 ^{bc}	0.198 ^d	0.143 ^s	0.211 ^d	0.333 ^a	0.158 ^f	0.142 ^s	0.136 ^s	0.132 ^s	0.145 ^f	0.165 ^e	0.117 ^s
Al(30)	0.129 ^d	0.112 ^f	0.064 ^j	0.120 ^e	0.150 ^c	0.136 ^d	0.108 ^f	0.155 ^e	0.121 ^e	0.0981 ^f	0.122 ^e	0.192 ^b	0.205 ^a	0.145 ^c	0.131 ^d	0.139 ^d	0.0923 ^s	0.0891 ^s	0.104 ^f	0.0843 ^h	0.132 ^d	0.0654 ⁱ
Cu(31)	0.0735 ^e	0.143 ^c	-	0.0336 ⁱ	0.0459 ^s	0.0534 ^s	0.172 ^b	0.0822 ^d	0.00912 ^j	0.141 ^c	0.0824 ^d	0.177 ^a	0.0519 ^s	0.0384 ^h	0.0634 ^f	0.00591 ^j	-	-	-	-	0.0101 ⁱ	-
Fe(32)	0.195 ^c	0.164 ^f	0.116 ⁱ	0.162 ^f	0.183 ^d	0.178 ^d	0.144 ^s	0.213 ^b	0.181 ^d	0.156 ^f	0.172 ^e	0.192 ^c	0.262 ^a	0.187 ^c	0.146 ^f	0.174 ^e	0.142 ^s	0.111 ⁱ	0.127 ^h	0.119 ⁱ	0.208 ^b	0.089 ^j
Mn(33)	0.0849 ^h	0.121 ^f	0.0739 ⁱ	0.0546 ^j	0.0608 ^j	0.0879 ^h	0.0932 ^h	0.0876 ^h	0.135 ^d	0.101 ^h	0.126 ^e	0.109 ^s	0.0687 ⁱ	0.113 ^s	0.123 ^f	0.171 ^b	0.164 ^c	0.116 ^f	0.121 ^l	0.143 ^d	0.146 ^d	0.218 ^a
Zn(34)	0.0232 ^c	0.0101 ^d	0.00991 ^d	0.0162 ^c	0.0226 ^c	0.0137 ^d	0.0333 ^b	0.0234 ^c	0.0182 ^c	0.0228 ^c	0.0181 ^c	0.0354 ^a	0.0201 ^c	0.0156 ^c	0.0142 ^d	0.0223 ^c	0.0204 ^c	0.0184 ^c	0.0173 ^c	0.0183 ^c	0.0195 ^c	0.0258 ^b
As(35)	0.201 ^c	0.149 ^e	0.197 ^c	0.0562 ^k	0.0911 ⁱ	0.0893 ⁱ	0.0993 ⁱ	0.187 ^c	0.0721 ^j	0.121 ^s	0.0582 ^k	0.106 ^h	0.127 ^f	0.202 ^c	0.142 ^f	0.279 ^b	0.162 ^d	0.0591 ^k	0.136 ^f	0.111 ^h	0.460 ^a	0.137 ^f
Cd(36)	29.4 ^a	20.5 ^h	14.5 ⁿ	9.40 ⁿ	16.1 ^l	24.5 ^e	20.6 ^h	25.0 ^d	28.5 ^b	16.0 ^j	22.0 ^f	28.0 ^b	19.8 ⁱ	17.3 ^j	19.9 ⁱ	25.5 ^e	25.7 ^c	15.2 ^m	16.9 ^k	21.6 ^{fs}	21.3 ^s	25.3 ^{cd}
Co(37)	0.111 ^a	0.0394 ^s	0.0255 ^h	0.0540 ^f	0.0453 ^f	0.0871 ^b	0.0572 ^e	0.0754 ^c	0.0655 ^d	0.0663 ^d	0.0911 ^b	0.0715 ^d	0.0939 ^b	0.0915 ^b	0.0535 ^f	0.0554 ^e	0.0414 ^z	0.0692 ^d	0.0409 ^s	0.0517 ^f	0.0509 ^f	0.0828 ^c
Cr(38)	0.453 ^c	0.396 ^e	0.266 ⁱ	0.382 ^f	0.454 ^c	0.474 ^{bc}	0.379 ^f	0.512 ^b	0.415 ^d	0.338 ^s	0.445 ^c	0.520 ^b	0.604 ^a	0.494 ^b	0.413 ^d	0.345 ^s	0.292 ^h	0.244 ^k	0.268 ⁱ	0.252 ^j	0.349 ^s	0.217 ^f
Li(39)	0.324 ^j	0.319 ⁱ	0.342 ⁱ	0.226 ^m	0.327 ^j	0.295 ^k	0.265 ^l	0.439 ^z	0.425 ^s	0.463 ^f	0.459 ^f	0.502 ^e	0.439 ^{fs}	0.339 ^j	0.372 ^h	0.674 ^d	1.29 ^c	0.459 ^f	2.39 ^a	1.26 ^c	0.513 ^e	1.53 ^b
Mo(40)	4.02 ⁿ	41.3 ^f	24.6 ^k	-	-	27.7 ⁱ	16.8 ^l	-	26.9 ^j	58.3 ^c	43.5 ^e	24.2 ^k	31.4 ^h	9.93 ^m	36.8 ^z	16.7 ^l	24.6 ^k	57.5 ^c	79.5 ^a	52.0 ^d	-	61.8 ^b
Ni(41)	2.18 ^d	1.40 ^h	0.854 ^l	0.783 ^m	1.01 ^k	1.34 ^j	0.867 ^l	1.27 ^j	5.57 ^a	1.96 ^e	0.719 ⁿ	0.913 ^l	1.51 ^{fs}	1.47 ^{sh}	0.689 ⁿ	2.16 ^d	4.76 ^b	1.56 ^f	2.79 ^c	4.43 ^b	2.23 ^d	1.42 ^h
Pb(42)	0.913 ^l	1.07 ^j	1.18 ^h	1.23 ^s	1.34 ^f	2.10 ^b	1.14 ^{hi}	2.23 ^a	0.932 ^l	0.822 ^m	0.843 ^m	1.04 ^k	1.76 ^c	1.79 ^c	1.69 ^d	0.821 ^m	1.10 ^j	1.20 ^{sh}	1.16 ^h	1.41 ^e	1.17 ^h	0.463 ⁿ
Sb(43)	0.244 ^a	0.155 ^e	0.168 ^d	0.0595 ⁱ	0.986 ^h	0.0941 ^h	0.121 ^s	0.171 ^d	0.152 ^f	0.117 ^z	0.124 ^z	0.219 ^b	0.145 ^f	0.187 ^c	0.145 ^f	0.0982 ^h	0.0644 ⁱ	0.0864 ^h	0.117 ^s	0.171 ^d	0.152 ^f	0.0933 ^h
Se(44)	0.326 ^d	0.283 ^s	0.288 ^f	0.153 ⁿ	0.202 ^k	0.186 ^k	0.165 ^m	0.194 ^k	0.372 ^b	0.354 ^c	0.314 ^e	0.265	0.472 ^a	0.203 ^k	0.226 ^l	0.196 ^k	0.338 ^d	0.184 ^l	0.219 ^j	0.364 ^c	0.325 ^d	0.245 ⁱ
V(45)	0.316 ^c	0.292 ^d	0.162 ^j	0.286 ^d	0.332 ^c	0.294 ^d	0.269 ^f	0.381 ^b	0.284 ^e	0.233 ^h	0.315 ^c	0.362 ^b	0.479 ^a	0.471 ^a	0.254 ^s	0.279 ^e	0.203 ⁱ	0.185 ^j	0.216 ^h	0.194 ⁱ	0.301 ^d	0.129 ^k

*Result for K is expressed as g/kg; Results for the elements 24-33 are expressed as mg/kg; Results for the elements 34-45 are expressed $\mu\text{g/kg}$. Numbers in parentheses are the numbers of the corresponding value in PCA loading plot (Figure 1B). '-' stands for not found. Different letters in the same row denote a significant difference among varieties according to Tukey's test, $p < 0.05$.

Shi ('Shiraz'); PNo ('Pinot Noir'); Pro ('Prokupac'); Gam ('Gamay'); Rie ('Riesling'); Pet ('Petra'); SBl ('Sauvignon Blanc'); Wel ('Welschriesling'); PGr ('Pinot Gris'); Cha ('Chardonnay'); PBl ('Pinot Blank'); Vra ('Vranac'); MHa ('Muscat Hamburg'); Plo ('Plovdina'); Žup ('Župljanka'); Cmu ('Chasselas musque'); Bbe ('Beogradska besemena'); Sme ('Smederevka').

Table S5. Correlation coefficients among elements (23-45) in leaves from Belgrade vineyard area^a

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
23	0.15	0.50	0.00	-0.21	0.29	-0.05	-0.21	-0.46	0.08	0.16	-0.27	-0.02	0.38	0.08	-0.07	0.13	0.08	0.68	0.18	-0.03	0.30	-0.20
	24	0.65	0.30	0.33	0.42	0.19	0.29	0.27	0.33	0.58	0.09	-0.29	0.39	0.30	0.35	0.27	0.38	0.44	0.04	-0.09	0.23	0.25
		25	-0.02	-0.09	0.42	-0.05	0.21	0.01	0.26	0.41	0.20	-0.37	0.43	-0.04	0.23	0.27	0.08	0.70	0.00	-0.09	0.21	0.15
			26	0.39	0.17	0.08	-0.15	0.46	-0.06	0.22	0.14	0.17	0.06	0.09	-0.11	0.33	0.24	-0.02	0.05	0.02	-0.13	-0.08
				27	0.27	-0.16	0.38	0.44	0.37	0.05	0.54	0.09	0.25	0.56	0.41	0.37	0.04	-0.25	0.10	0.21	0.11	0.32
					28	0.12	0.04	0.32	0.12	0.67	0.38	-0.12	0.81	0.41	0.10	0.52	0.27	0.55	-0.52	0.49	0.42	-0.06
						29	-0.34	0.00	-0.44	0.65	-0.53	0.14	0.01	-0.30	-0.31	0.20	0.58	-0.11	-0.10	0.11	0.05	-0.36
							30	0.13	0.87	-0.10	0.45	-0.08	0.34	0.51	0.96**	0.39	-0.22	-0.06	0.42	0.21	0.19	0.84
								31	-0.06	0.26	0.57	-0.07	0.25	0.01	0.06	0.24	0.32	-0.28	-0.29	0.19	-0.07	-0.01
									32	-0.16	0.25	0.04	0.37	0.68	0.92*	0.39	-0.20	0.18	0.39	0.23	0.43	0.86
										33	-0.05	-0.03	0.49	0.12	-0.02	0.42	0.56	0.38	-0.23	0.31	0.19	-0.05
											34	-0.20	0.39	0.23	0.34	0.29	-0.22	-0.06	-0.18	0.24	-0.07	0.26
												35	0.09	0.08	0.00	0.01	-0.19	-0.11	0.28	0.70	0.05	0.14
													36	0.52	0.44	0.43	0.02	0.46	-0.01	0.59	0.27	0.20
														37	0.65	0.26	-0.08	0.16	0.18	0.35	0.29	0.60
															38	0.36	-0.22	0.00	0.50	0.25	0.20	0.90*
																39	0.46	0.22	-0.12	0.39	0.59	0.24
																	40	0.08	-0.33	-0.10	0.52	-0.30
																		41	-0.24	0.17	0.46	-0.01
																			42	-0.10	-0.33	0.46
																				43	0.31	0.25
																					44	0.15
																						45

^a*p* values: $p < 0.01$, $p < 0.001$, $p < 0.0001$, $*p < 0.00001$, $**p < 0.000001$.

Table S6. Correlation coefficients among elements (23-45) in leaves from Mlava vineyard area^a

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
23	-0.16	-0.54	-0.20	0.61	0.19	0.21	-0.05	0.36	0.09	0.48	0.41	0.01	0.80	-0.13	0.21	-0.24	-0.49	0.55	-0.16	-0.38	0.41	-0.02
	24	-0.32	0.48	-0.42	0.88	0.74	0.61	0.50	0.72	-0.66	-0.61	0.53	-0.40	-0.44	0.63	-0.60	-0.58	0.03	0.62	0.21	0.14	0.72
		25	0.19	-0.54	-0.72	-0.44	0.01	-0.48	-0.22	-0.20	-0.20	-0.22	-0.34	-0.26	-0.17	0.82	0.62	-0.13	-0.10	-0.08	-0.43	-0.09
			26	-0.13	0.28	0.72	0.78	0.50	0.88	-0.21	-0.27	0.83	0.06	-0.62	0.82	-0.02	-0.52	0.08	0.24	0.52	0.22	0.87
				27	-0.05	0.02	-0.35	0.02	-0.11	0.66	0.48	0.05	0.73	0.19	-0.13	-0.05	-0.24	0.42	-0.18	0.28	0.70	-0.25
					28	0.80	0.50	0.67	0.68	-0.32	-0.27	0.55	-0.06	-0.18	0.60	-0.87	-0.79	0.03	0.42	0.13	0.26	0.61
						29	0.79	0.82	0.88	-0.27	-0.27	0.75	0.14	-0.49	0.83	-0.63	-0.85	0.18	0.41	0.38	0.29	0.87
							30	0.93	0.88	-0.27	-0.19	0.78	0.04	-0.48	0.95	-0.39	-0.67	-0.13	0.16	0.20	-0.14	0.96
								31	0.87	-0.02	0.06	0.89	0.31	-0.20	0.90	-0.73	-0.82	-0.05	0.07	0.10	-0.03	0.87
									32	-0.17	-0.17	0.92	0.17	-0.53	0.96	-0.46	-0.86	0.05	0.22	0.27	0.21	0.96
										33	0.84	0.12	0.80	0.52	-0.12	0.05	-0.16	-0.17	-0.86	-0.26	0.09	-0.32
											34	0.10	0.37	0.65	-0.11	-0.08	-0.15	-0.38	-0.83	-0.38	-0.16	-0.30
												35	0.30	-0.26	0.85	-0.40	-0.82	-0.15	-0.05	0.32	0.24	0.82
													36	0.06	0.26	-0.06	-0.50	0.25	-0.55	-0.20	0.36	0.03
														37	-0.55	-0.25	0.26	-0.70	-0.64	-0.19	-0.40	-0.57
															38	-0.43	-0.85	0.07	0.15	0.14	0.11	0.95
																39	0.69	0.26	-0.09	0.00	0.02	-0.42
																	40	-0.11	-0.03	-0.06	-0.35	-0.74
																		41	0.56	0.16	0.75	0.02
																			42	0.49	0.41	0.31
																				43	0.47	0.31
																					44	0.07
																						45

^ap values: $p < 0.05$, $p < 0.01$, $p < 0.001$.