

Supplementary materials for:

The Impacts of Frozen Material-Other-Than-Grapes (MOG) on Aroma Compounds of Cabernet Franc and Cabernet Sauvignon

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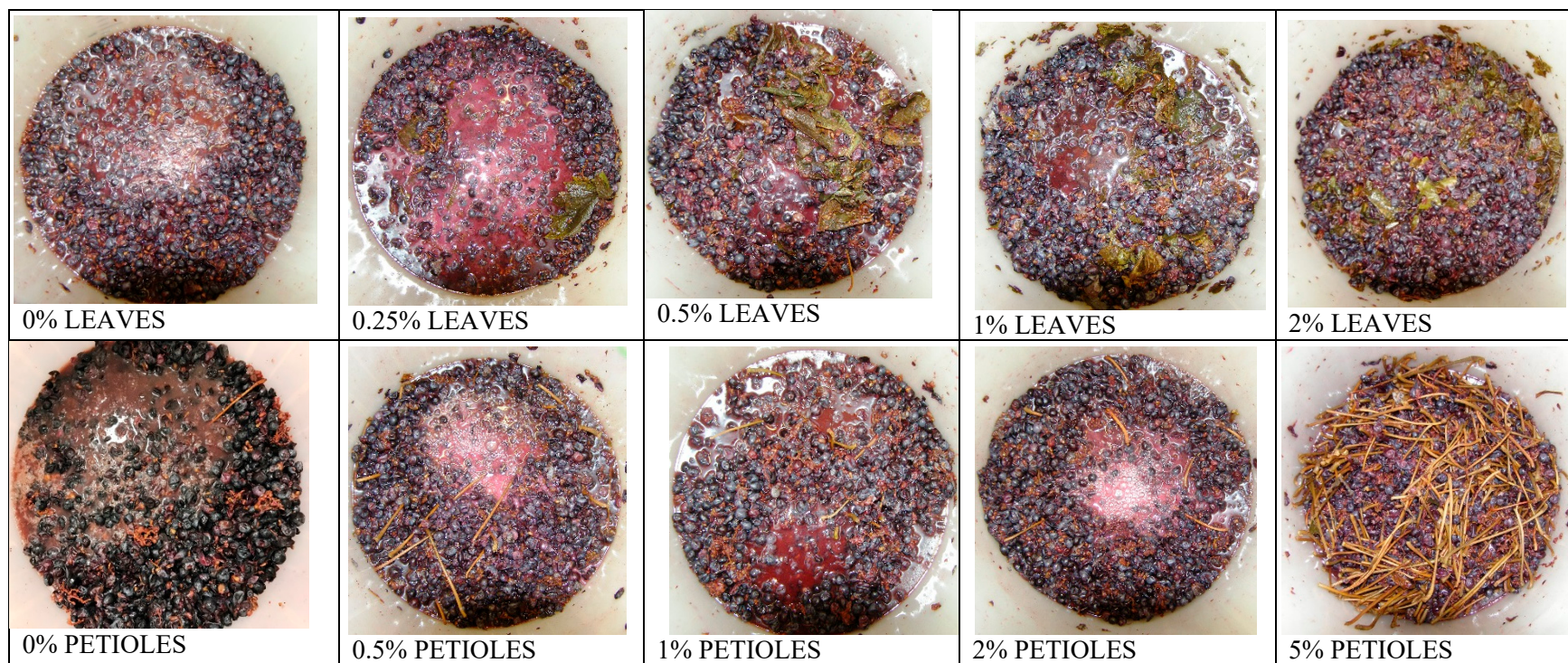


Figure S1. Overview of representative fermentations of treatments involving various leaf and petiole additions to Cabernet franc, 2017.

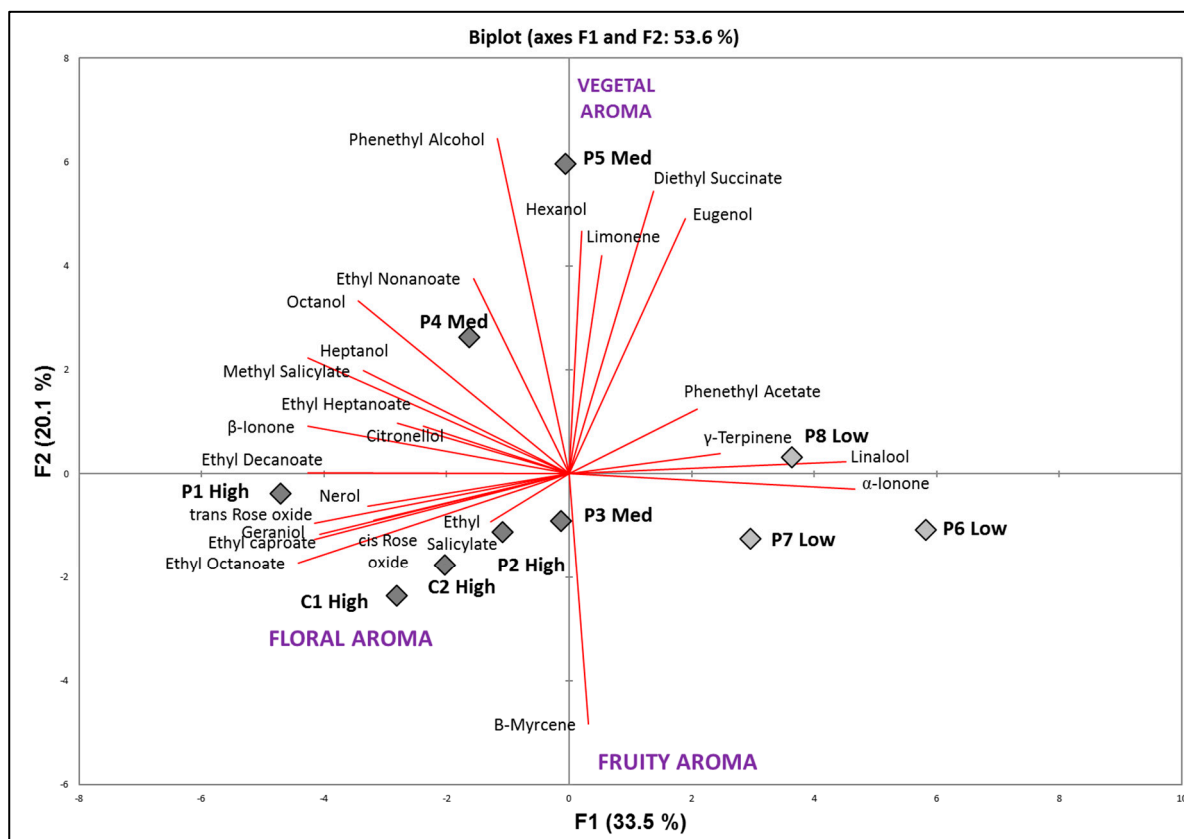


Figure S2. Principal components analysis of several commercial Ontario red wines with various levels of MOG-induced floral taint, 2015. Abbreviations: P1-P8: Andrew Peller Ltd. samples 1 to 8; C1: Constellation Brands sample 1. Adapted, with permission, from Wang *et al.* (2020).

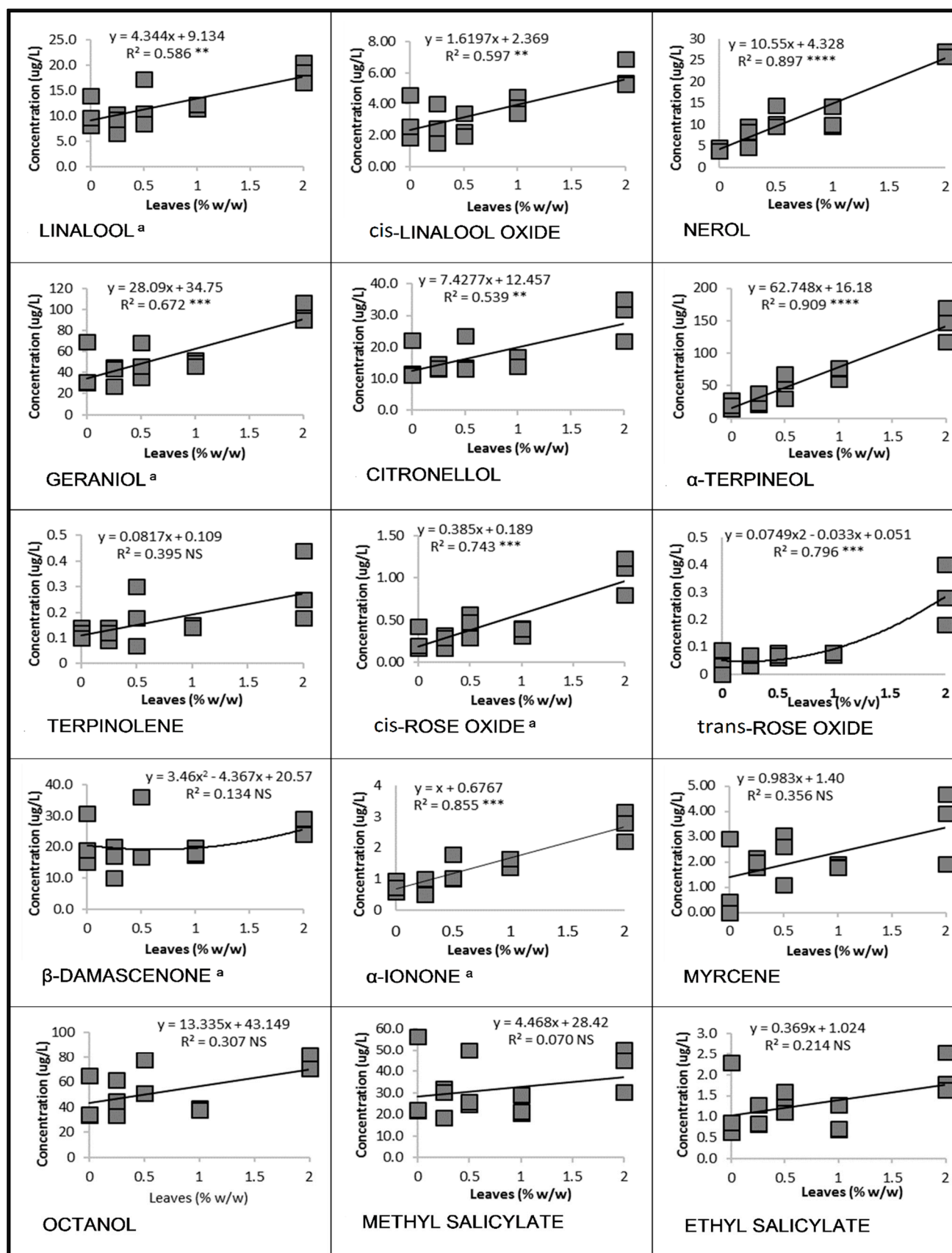


Figure S3. Relationships between several frozen leaf levels (N=15) added to Ontario Cabernet franc wine fermentations vs. aroma compound concentrations, 2017. **, ***, ****, NS: Significant at $p \leq 0.01$, 0.001, 0.0001, or not significant, respectively. L, Q: Linear or quadratic trends, respectively. ^a Odor-active for at least the highest leaf treatment. Depictions of β-ionone, eugenol, and hexanol are found in Wang *et al.* (2020). Information on other compounds can be found in Supplemental Table 8.

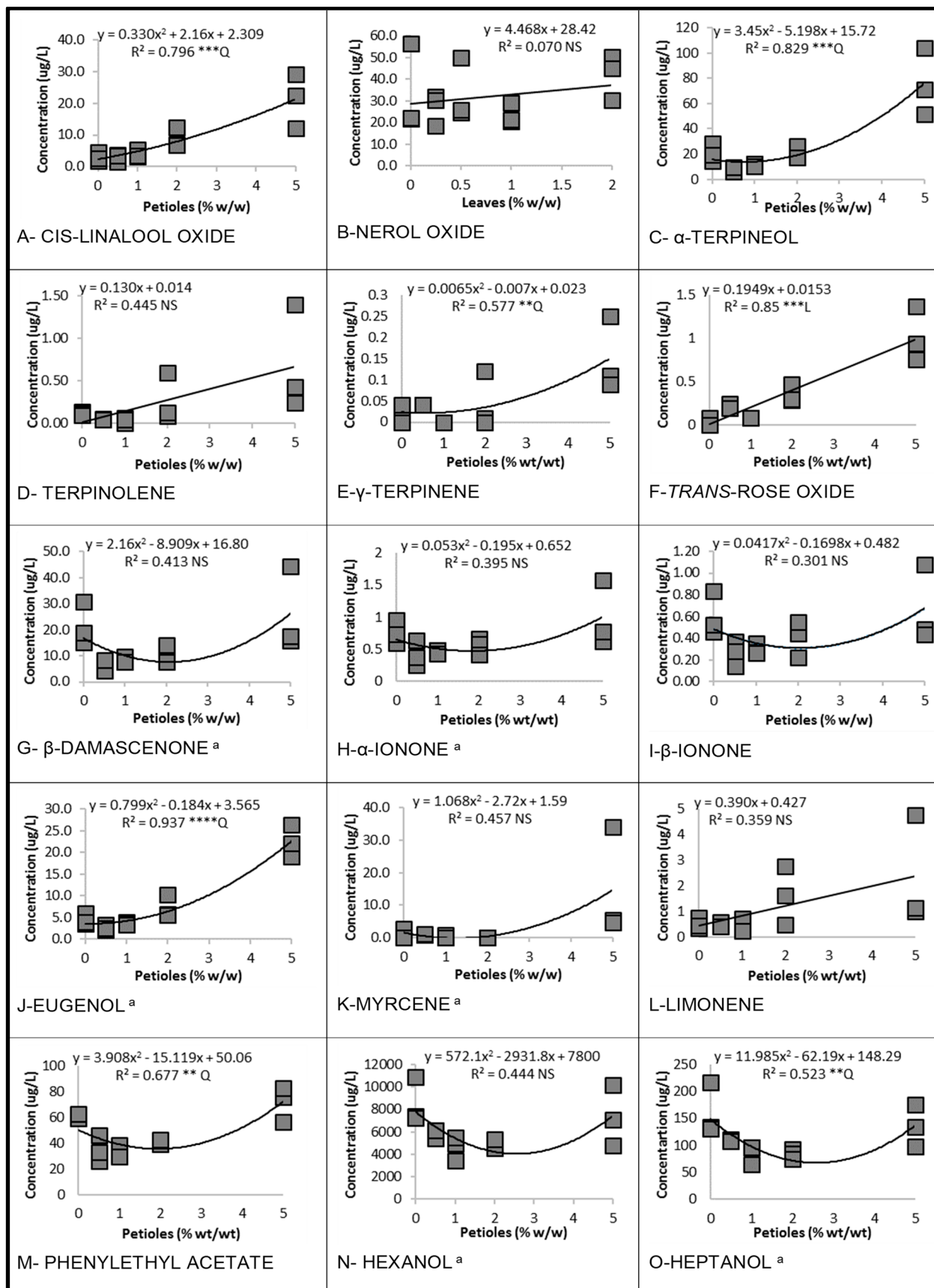


Figure S4. Relationships between several frozen petiole levels (N=15) added to Ontario Cabernet franc wine fermentations vs. aroma compound concentrations, 2017. ***, ****, NS: Significant at $p \leq 0.001$, 0.0001 , or not significant, respectively. L, Q: Linear or quadratic trends, respectively. ^a Odor-active for at least the highest petiole treatment. The following compounds are depicted in Wang *et al.* (2020): linalool, geraniol, citronellol, nerol, citral, *cis*-rose oxide, octanol, methyl salicylate, ethyl salicylate. Information on other compounds can be found in Supplemental Table 9.

Table S1. Volatile standards for quantification of aroma compounds in Ontario Cabernet franc and Cabernet Sauvignon wines, 2015 to 2017.

Compound	CAS #	RT ^a	m/z Ions	Calibration ranges (mg/L)	Odor description ^b	Odor threshold $\mu\text{g/L}$ ^c
<u>Esters</u>						
Ethyl isobutyrate	97-62-1	9.69	116, 71, 88	1.67-10	Sweet, rubber	0.1 ⁽¹⁾
Ethyl hexanoate	123-66-0	18.66	88, 99, 101	66.7-400	Apple peel, fruit	5
Ethyl heptanoate	106-30-9	22.78	88, 97, 89	3.33-20	Fruit	2.2 ⁽¹⁾
Ethyl octanoate	106-32-1	26.80	88, 101, 73	83.3-500	Fruit, fat	2
Ethyl nonanoate	123-29-5	30.46	101, 88, 141	8.3-50	Fruity, rose, waxy, rum, wine, natural tropical	
Ethyl decanoate	110-38-3	34.18	88, 89, 85	66.7-400	Grape	200 ⁽²⁾
2-Phenylethyl acetate	103-45-7	31.69	104, 105, 103	33.3-200	Rose, honey, tobacco	250
Isoamyl acetate	123-92-2	13.82	43, 42, 44	416.7-2500	Banana	30
Isobutyl acetate	110-19-0	10.26	73, 56, 43	41.7-250	Sweet, fruity, ethereal, banana, tropical	65 ⁽³⁾
Hexyl acetate	142-92-7	19.40	43, 42, 44	4.17-25	Apple, fruity, pear, sour	2 ⁽³⁾
Diethyl succinate	123-25-1	28.13	101, 129, 73	333.3-2000	Wine, fruit	200000 ⁽⁴⁾
Isoamyl_hexanoate	2198-61-0	28.70	70, 99, 117	1.67-10	Fruity banana apple pineapple green	
<u>Alcohols</u>						
Isobutyl alcohol	78-83-1	8.68	43, 42, 41	41667-250 000	Wine solvent, bitter	40000
Isoamyl alcohol	123-51-3	11.49	41, 42, 43	8333-500 000	Whiskey, malt, burnt	30000
Phenylethanol	60-12-08	30.47	91, 92, 93	11667-70 000	Honey, spice, rose, lilac	10000
1-Hexanol	111-27-3	16.05	56, 55, 57	250-1500	Resin, flower, green	8000
1-Octanol	111-87-5	23.77	56, 55, 57	250-1500	Chemical, metal, burnt	110 ⁽⁵⁾
1-Heptanol	111-70-6	19.86	70, 41, 56	250-1500	Chemical, green	3; 98 ⁽⁶⁾
<u>Terpenes</u>						
α -Citral	5392-40-5	31.25	69, 41, 84	0.58-3.5	Lemon	14 ⁽⁷⁾
β -Citral		29.90	134, 94, 69	1.03-6.2	Lemon	14 ⁽⁷⁾
β -Citronellol	106-22-9	30.21	69, 68, 70	10, 1, 0.1	Rose	100
Eugenol	97-53-0	38.12	164, 149, 131	1.67-10	Clove, honey	6 ⁽²⁾
Geraniol	106-24-1	31.77	69, 68, 70	1.67-10	Rose, geranium	30
Limonene	5989-27-5	19.69	136, 93, 107	1.67-10	Citrus, mint	15
Linalool	78-70-6	24.45	71, 72, 70	1.67-10	Flower, lavender	15
cis-Linalool oxide	5989-33-3	22.75	94, 93, 111	83.3-500	Floral, wood	
trans-Linalool oxide	11063-78-8	23.49	59, 94, 111	83.3-500	Floral, wood	
Myrcene	123-35-3	17.92	136, 93, 69	1.67-10	Balsamic, must, spice	13 ⁽⁸⁾
Nerol	106-25-2	30.65	93, 69, 41	1.67-10	Sweet	300 ⁽⁹⁾
Nerol oxide	1786-08-9	25.62	83, 68, 152	1.67-10	Oil, flower	
Nerolidol	7212-44-4	39.74	93, 69, 107	1.67-10	Wax	
cis-Rose oxide	3033-23-6	23.42	154, 139, 69	1.19-7.12	Green, floral, rose, lychee	0.2
trans-Rose oxide	876-18-6	24.16	154, 139, 69	0.48-2.88	Floral	450
α -Terpineol	98-55-5	28.82	59, 60, 61	1.67-10	Oil, anise, mint	330 ⁽¹⁾
Terpinolene	586-62-9	22.32	93, 136, 121	1.67-10	Pine, plastic	200 ⁽⁸⁾
γ -Terpinene	99-85-4	21.01	136, 93, 121	1.67-10	Oily, woody, terpene, lemon/lime, tropical, herbal	3260 ⁽¹⁰⁾
<u>Norisoprenoids</u>						
β -Damascenone	23726-93-4	35.25	69, 121, 190	1.67-10	Apple, rose, honey	0.05

α -Ionone	127-41-3	36.63	121, 93, 136	1.67-10	Wood, violet	0.09
β -Ionone	79-77-6	38.74	177, 135, 91	1.67-10	Seaweed, violet, flower, raspberry	2.6
<i>Other</i> Methyl salicylate	119-36-8	29.94	152, 120, 92	1.67-10	Peppermint	622 ⁽⁶⁾
Ethyl salicylate	118-61-6	32.15	166, 120, 92	1.67-10	Wintergreen, mint	

^a Retention time. ^b Odor description from Flavornet database (www.flavornet.org) and The Good Scents Company Information System (www.thegoodscentscompany.com). ^c Odor thresholds obtained from Guth (1997) determined in water/ethanol (90+10, w/w). Others from: ⁽¹⁾ Takeoka *et al.* (1990); ⁽²⁾ Ferreira *et al.* (2000) determined in synthetic wine 11% v/v ethanol, 7 g/L glycerol, 5 g/L tartaric acid and pH adjusted to 3.4; ⁽³⁾ Buttery *et al.* (1982); ⁽⁴⁾ Etiévant (1991) determined in 12% water/ethanol mix; ⁽⁵⁾ Buttery (1988), in water; ⁽⁶⁾ Ruth (1986); ⁽⁷⁾ Ahmed *et al.* (1978), in water; ⁽⁸⁾ Buttery *et al.* (1968), in water; ⁽⁹⁾ Leffingwell & Leffingwell (1991); ⁽¹⁰⁾ Plotto *et al.* (2004), in orange juice.

Table S2. Aroma reference standards used during descriptive analysis of Ontario Cabernet franc and Cabernet Sauvignon wines with varying contents of MOG.

Attribute	Aroma standard ^a
Red fruit	10 mL fresh strawberry juice and 10 mL of fresh raspberry juice
Dark fruit	20 mL of fresh blackberry juice, 10 mL of fresh blueberry juice, 25 mL of Ribena concentrated black currant beverage, 40 mL of OASIS berry pomegranate juice
Dried fruit	80 mL of No Name TM prune nectar, 6 pitted dried prune, and 15 seedless Thompson raisins
Tropical fruit	70 g of frozen PC TM mango and peach fruit blend
Floral	100 µL of phenyl ethanol and 2 µL of <i>cis</i> -rose oxide
Vegetal	Additional 250 mL of base wine, 30 mL of juice from No Name French cut seasoned green beans, and 1 tbsp. of frozen PC TM small sweet peas
Herbaceous	2.8 g of organic cat grass, 4 fresh green beans, 1/4 leaf of fresh mint
Spice	0.1 g of ground coriander, 0.2 g of ground cloves, 0.05 g of all spice, 0.05 g of anise seed, and 0.05 g o cinnamon
Earthy	25 mL of fresh earth/soil collected from the forest floor, 10 g of wet leaves collected from the forest floor, and 5 mL of mushroom stock solution ^b

^a All standards were prepared in 500 mL of a neutral Cabernet franc base wine and stored in 4°C between sessions.

^b Prepared in 500 mL of base red wine with 10 µL of 1-octen-3-ol

Table S3. Concentrations of several aroma compounds (µg/L) in Ontario red wines, with their odor activity values.

Sample ^a	α -Ionone	β -Ionone	β -Damascenone	Citronellol	Geraniol	<i>cis</i> -Rose oxide	<i>trans</i> -Rose oxide	γ -Terpinene	Limonene
C1 High	0.884±0.014	0.232±0.021	2.42±0.09	1.209±0.212	7.716±1.487	0.049±0.005	0.027±0.001	0.072±0.000	0.215±0.053
C2 High	0.662±0.084	0.244±0.042	2.18±0.31	0.928±0.141	6.870±0.566	0.058±0.020	0.033±0.012	0.065±0.058	0.183±0.040
P1 High	1.423±0.030	0.291±0.007	5.17±1.07	2.088±0.090	7.486±1.217	0.217±0.035	0.068±0.007	0.138±0.015	0.143±0.013
P2 High	1.504±0.318	0.274±0.039	2.46±0.03	0.957±0.114	5.033±0.350	0.111±0.025	0.026±0.003	0.080±0.009	0.115±0.014
P3 Med	1.869±0.005	0.259±0.002	4.03±0.23	0.940±0.102	4.708±0.284	0.084±0.000	0.040±0.001	0.134±0.017	0.152±0.017
P4 Med	1.675±0.182	0.238±0.026	3.39±0.06	0.922±0.015	4.976±0.271	0.034±0.005	0.016±0.001	0.087±0.007	0.176±0.028
P5 Med	1.792±0.164	0.259±0.006	4.38±0.07	1.361±0.027	6.347±0.312	0.022±0.000	0.007±0.006	0.104±0.013	0.137±0.011
P6 Low	1.929±0.233	0.153±0.039	2.66±0.04	1.313±0.074	7.347±4.078	0.021±0.009	0.014±0.003	0.044±0.005	0.222±0.032
P7 Low	2.322±0.238	0.224±0.024	2.06±0.67	0.921±0.143	5.979±0.650	0.016±0.005	0.010±0.002	0.059±0.009	0.182±0.003
P8 Low	2.536±0.108	0.160±0.001	2.83±0.14	1.413±0.093	3.893±0.241	0.036±0.006	0.000±0.002	0.056±0.020	0.175±0.014
P9 Low	3.226±0.120	0.152±0.001	2.20±0.07	0.920±0.040	4.091±0.250	0.019±0.002	0.005±0.004	0.137±0.002	0.145±0.038
P10 Low	4.859±0.133	0.188±0.000	2.61±0.03	0.849±0.024	4.371±0.143	0.045±0.009	0.008±0.003	0.206±0.068	0.202±0.040
Threshold	2.6	0.09	0.05	100	30	0.2	450	3260	15
Mean Med-High ^b	1.401	0.257	3.433	1.201	6.162	0.082	0.031	0.097	0.160
Mean Low ^c	2.950	0.175	2.470	1.080	5.140	0.027	0.007	0.100	0.185
Odor activity value ^d	0.538	2.86	68.6	0.012	0.205	0.410	0.155	0.00003	0.011

Table S3 contd. Concentrations of several aroma compounds (µg/L) in Ontario red wines, with their odor activity values.

Sample ^a	Ethyl hexanoate	Ethyl heptanoate	Ethyl octanoate	Ethyl nonoate	Ethyl decanoate	Phenylethyl acetate	Heptanol	Octanol	Phenylethyl alcohol
C1 High	222.6±33.8	1.63±0.13	399.3±29.3	0.857±0.025	143.0±6.0	47.19±3.21	40.4±0.1	13.98±1.48	40500±2510
C2 High	210.1±19.4	1.62±0.13	390.4±44.7	0.912±0.092	123.1±13.0	27.26±1.90	37.9±3.6	15.36±3.32	38734±6476
P1 High	251.4±22.5	1.41±0.10	352.6±34.9	0.649±0.050	113.9±11.1	37.70±3.70	44.0±2.4	17.65±0.02	46739±1406
P2 High	238.9±20.0	1.70±0.04	327.4±6.1	0.661±0.061	80.0±1.7	33.16±5.25	35.5±1.4	13.31±1.91	41107±6179
P3 Med	203.6±15.4	1.79±0.21	288.1±34.5	0.638±0.025	75.2±2.9	47.25±6.29	38.0±4.9	16.64±3.56	42635±10358
P4 Med	237.4±27.7	1.44±0.06	342.4±36.4	1.842±0.083	107.4±10.1	43.13±9.41	43.1±5.5	19.09±2.33	60569±11183
P5 Med	245.3±6.3	1.65±0.01	227.4±3.0	0.934±0.014	60.6±0.4	55.74±2.02	39.2±0.2	14.25±0.49	51031±1192
P6 Low	204.0±25.5	1.07±0.06	158.4±12.1	0.394±0.009	21.8±1.6	30.43±0.96	33.6±2.6	15.85±1.58	43039±1222
P7 Low	147.1±7.6	1.08±0.05	112.9±11.3	0.505±0.033	21.5±2.2	33.94±3.03	35.7±2.4	13.96±1.14	47142±7851
P8 Low	201.0±47.0	1.13±0.13	270.7±62.5	0.423±0.056	69.9±14.0	25.58±5.33	29.7±3.5	13.24±2.49	40914±4456
P9 Low	201.0±9.6	1.32±0.03	284.8±17.0	0.523±0.023	69.8±3.9	52.43±1.43	35.7±1.1	12.14±0.44	46305±2684
P10 Low	130.8±45.2	1.27±0.16	187.5±4.1	0.770±0.002	52.4±2.4	53.69±2.66	31.1±5.4	12.62±4.00	34148±10322
Threshold	5	2.2	5	---	200	250	3	110	10000
Mean Med-High ^b	229.9	1.61	332.51	0.93	100.46	41.63	39.73	15.75	45902
Mean Low ^c	135.9	1.17	202.80	0.52	47.10	39.20	33.20	13.56	42310
Odor activity value ^d	45.98	0.73	66.5	---	0.5	0.167	13.2	0.143	4.59

^a Sample code: C1, C2: Constellation samples; P1-P10: Peller samples.

^b Medium to high floral taint; ^c Low floral taint.

^d Odor activity value of medium-high samples. Boldfaced values indicate those with likely odor-activity.

Table S4. Additional compounds (not depicted in Figure 1) in Cabernet franc wines impacted by various leaf additions, Ontario, Canada, 2016.

Compound (µg/L)	Cabernet franc-leaves (% w/w) 2016					Trendline equation	r ² and significance level
	0	0.25	0.5	1	2		
<u>Esters</u>							
Ethyl hexanoate ^a	106.77	122.13	122.12	119.42	106.55	$y = -19.55x^2 + 35.688x + 117.3$	0.154 NS
Ethyl heptanoate	1.48	1.57	1.39	1.49	1.43	$y = -0.0369x + 0.8718$	0.018 NS
Ethyl octanoate ^a	85.60	93.66	80.14	86.54	46.94	$y = -15.765x^2 + 12.47x + 89.61$	0.329 NS
Ethyl nonanoate	0.429	0.442	0.427	0.392	0.370	$y = -0.0357x + 0.4579$	0.082 NS
Ethyl decanoate	25.67	26.07	23.55	20.67	13.92	$y = -6.2018x + 28.006$	0.392 *L
2-Phenylethyl acetate	32.44	34.72	35.46	29.61	31.17	$y = -1.6259x + 34.006$	0.066 NS
Diethyl succinate	14571	12002	10471	13450	18102	$y = -870.66x + 10245$	0.104 NS
Isoamyl hexanoate	0.331	0.385	0.327	0.316	0.289	$y = -0.0327x + 0.354$	0.126 NS
<u>Alcohols</u>							
Isoamyl alcohol (mg/L) ^a	611.10	685.69	938.44	874.76	824.58	$y = -216.69x^2 + 532.4x + 617.9$	0.162 NS
Phenylethanol (mg/L) ^a	70.19	79.56	83.58	76.81	69.34	$y = -2.976x + 78.128$	0.015 NS
1-Heptanol ^a	43.31	47.01	48.26	45.57	45.93	$y = -2.917x^2 + 6.419x + 15.97$	0.019 NS
<u>Terpenes</u>							
α-Citral	2.46	2.85	2.85	3.08	3.86	$y = 0.6456x + 2.5368$	0.962 ****L
β-Citral	0.026	0.033	0.029	0.014	0.015	$y = 0.0029x^2 - 0.015x + 0.031$	0.634 **Q
Limonene	0.176	0.362	0.217	0.232	0.221	$y = -0.013x + 0.252$	0.054 NS
Nerol oxide	0.346	0.808	2.66	2.06	2.16	$y = -1.282x^2 + 3.398x + 0.419$	0.707 **Q
Nerolidol	9.78	11.45	16.72	16.60	13.77	$y = -5.739x^2 + 13.48x + 9.649$	0.387 *Q
trans-Rose oxide	0.021	0.014	0.027	0.045	0.06	$y = 0.0227x + 0.0164$	0.428 *L
γ-Terpinene	0.041	0.049	0.055	0.070	0.087	$y = 0.0227x + 0.0436$	0.729 ***L
<u>Norisoprenoids</u>							
α-Ionone ^a	3.84	4.16	3.99	5.66	5.19	$y = 1.297x + 6.190$	0.214 NS

*, **, ***, ****, NS: Significant at $p < 0.05, 0.01, 0.001, 0.0001$, or not significant, respectively. L, Q: Linear or quadratic trends, respectively. ^a Odor-active for at least the highest leaf treatment. Thresholds for the following compounds were not available: Nerolidol, nerol oxide, *cis* and *trans*-linalool oxide, ethyl nonanoate, isoamyl hexanoate.

Table S5. Additional compounds (not depicted in Figure 2) in Cabernet franc wines impacted by various petiole additions, Ontario, Canada, 2016.

Compound (µg/L)	Cabernet franc-petioles (% w/w) 2016					Trendline equation	r ² and significance level
	0	0.5	1	2	5		
<i>Esters</i>							
Ethyl hexanoate ^a	106.77	115.39	102.52	102.66	112.90	y = 0.988x + 111.72	0.009 NS
Ethyl heptanoate	1.482	1.506	1.389	1.414	1.478	y = 0.0148x ² - 0.077x + 0.865	0.029 NS
Ethyl octanoate ^a	85.60	104.21	70.50	77.29	78.98	y = -2.2568x + 90.725	0.027 NS
Ethyl nonanoate	0.429	0.437	0.411	0.434	0.513	y = 0.0058x ² - 0.0127x + 0.450	0.123 NS
Ethyl decanoate	25.67	28.26	21.45	26.62	28.45	y = 0.585x + 26.44	0.020 NS
2-Phenylethyl acetate	32.44	31.72	33.35	31.85	37.36	y = 0.3259x ² - 0.702x + 32.65	0.181 NS
Isoamyl acetate ^a	689.03	902.26	676.67	518.72	673.99	y = 27.16x ² - 164.16x + 806.91	0.361 *Q
Isobutyl acetate	0.160	0.258	0.187	0.149	0.194	y = 0.004x ² - 0.0225x + 0.204	0.064 NS
Hexyl acetate	0.044	0.065	0.058	0.086	0.083	y = -0.004x ² + 0.026x + 0.045	0.863 ***Q
Diethyl succinate	9875	10691	10335	10362	10601	y = 70.757x + 10169	0.003 NS
Isoamyl_hexanoate	0.331	0.396	0.347	0.397	0.468	y = 0.0242x + 0.3466	0.178 NS
<i>Alcohols</i>							
Isobutyl alcohol (mg/L) ^a	142.11	353.66	242.22	335.68	345.56	y = -15.15x ² + 104.9x + 197.1	0.495 **Q
Isoamyl alcohol (mg/L) ^a	611.10	671.38	702.97	809.64	753.94	y = -22.06x ² + 140.4x + 604.6	0.076 NS
Phenylethanol (mg/L) ^a	70.19	73.36	81.58	78.79	91.58	y = 3.885x + 72.496	0.148 NS
1-Heptanol ^a	43.31	43.83	47.48	47.93	52.09	y = -0.3846x ² + 4.277x + 13.96	0.200 NS
<i>Terpenes</i>							
α-Citral	2.46	2.22	2.67	2.47	3.09	y = 0.1416x + 2.338	0.739 ***L
β-Citral	0.026	0.014	0.009	0.040	0.001	y = -0.003x ² + 0.012x + 0.02	0.412 *Q
Limonene	0.176	0.166	0.180	0.226	0.255	y = 0.018x + 0.170	0.408 *L
Nerol oxide	0.346	1.153	0.814	1.91	5.86	y = 1.099x + 0.148	0.966 ****L
Nerolidol	9.78	11.94	15.94	22.07	36.85	y = 5.45x + 10.05	0.821 ***L
trans-Rose oxide	0.021	0.021	0.058	0.102	0.278	y = 0.0536x + 0.005	0.918 ***L
γ-Terpinene	0.041	0.047	0.042	0.051	0.060	y = 0.0037x + 0.042	0.391 *L
<i>Norisoprenoids</i>							
α-Ionone ^a	3.84	3.64	3.18	3.38	2.85	y = -0.2866x + 5.667	0.186 NS

*, ***, ****, NS: Significant at p < 0.05, 0.001, 0.0001, or not significant, respectively. L, Q: Linear or quadratic trends, respectively. ^a Odor-active for at least the highest petiole treatment. Thresholds for the following compounds were not available: Nerolidol, nerol oxide, *cis* and *trans*-linalool oxide, ethyl nonanoate, isoamyl hexanoate.

Table S6. Additional compounds (not depicted in Figure 3) in Cabernet Sauvignon wines impacted by various leaf additions, Ontario, Canada, 2016.

Compound	Cabernet Sauvignon-leaves (% w/w) 2016					Trendline equation	r ² and significance level
	0	0.25	0.5	1	2		
<u>Esters</u>							
Ethyl isobutyrate ^a	1137.8	1575.7	1006.9	1014.9	809.22	y = -251.06x + 1297.2	0.176 NS
Ethyl hexanoate ^a	222.64	294.06	192.18	226.74	247.01	y = 1.3563x + 235.51	0.0006 NS
Ethyl heptanoate ^a	2.04	2.56	1.63	1.86	3.09	y = 0.788x ² - 1.18x + 2.28	0.592 *Q
Ethyl octanoate ^a	138.17	168.10	97.32	107.66	116.55	y = 29.13x ² - 75.84x + 151.5	0.269 NS
Ethyl nonanoate	3.88	2.61	0.813	0.750	0.833	y = 2.012x ² - 5.43x + 3.71	0.481 NS
Ethyl decanoate	37.55	44.81	29.43	30.83	23.01	y = -8.584x + 39.566	0.387 NS
2-Phenylethyl acetate	58.57	65.74	43.07	46.22	56.12	y = 14.08x ² - 31.39x + 62.53	0.283 NS
Isoamyl acetate ^a	805.61	1032.1	756.35	745.00	846.05	y = 90.56x ² - 212.99x + 900.55	0.108 NS
Isobutyl acetate ^a	55.69	85.87	71.64	57.57	63.55	y = -3.5143x + 69.498	0.018 NS
Hexyl acetate ^a	4.43	5.14	4.35	4.96	8.67	y = 1.6069x ² - 1.28x + 4.76	0.893 ***Q
Diethyl succinate	14570.5	12001.7	10470.6	13450.0	18101.8	y = 3879.7x ² - 5424.5x + 13665	0.511 *Q
Isoamyl hexanoate	0.183	0.407	0.137	0.153	0.157	y = -0.0563x + 0.2496	0.122 NS
<u>Alcohols</u>							
Isobutyl alcohol (mg/L) ^a	345.72	298.81	341.16	335.18	272.17	y = -27.99x + 339.6	0.052 NS
Isoamyl alcohol (mg/L) ^a	542.12	633.73	515.57	539.81	642.43	y = 61.15x ² - 91.87x + 578.66	0.176 NS
Phenylethanol (mg/L) ^a	83.39	108.21	77.65	83.03	97.22	y = 2.4913x + 88.03	0.013 NS
1-Heptanol ^a	41.69	46.34	29.52	41.16	85.43	y = 25.139x ² - 29.75x + 44.43	0.902 ***Q
<u>Terpenes</u>							
α -Citral	1.38	1.77	1.22	1.53	2.74	y = 0.583x ² - 0.570x + 1.54	0.816 ***Q
Limonene	0.460	0.420	0.340	0.667	0.730	y = 0.1757x + 0.3916	0.249 NS
Nerol	0.793	2.23	1.79	3.23	17.27	y = 5.4119x ² - 3.0648x + 1.612	0.966 ****Q
Nerol oxide	0.120	0.253	0.200	0.410	0.153	y = -0.223x ² + 0.470x + 0.111	0.664 **Q
Nerolidol	0.290	0.233	0.170	0.207	0.877	y = 0.376x ² - 0.469x + 0.309	0.953 ****Q
<i>trans</i> -Rose oxide	0.227	0.057	0.153	0.400	0.750	y = 0.320x + 0.077	0.826 ***L
γ -Terpinene	0.090	0.160	0.100	0.120	0.160	y = 0.009x ² + 0.005x + 0.113	0.231 NS
<u>Norisoprenoids</u>							
α -Ionone ^a	0.390	0.300	0.533	0.580	1.03	y = 0.0935x ² + 0.148x + 0.358	0.926 ***Q

*, **, ***, ****, NS: Significant at p < 0.05, 0.01, 0.001, 0.0001, or not significant, respectively. L, Q: Linear or quadratic trends, respectively. ^a Odor-active for at least the highest leaf treatment. Thresholds for the following compounds were not available: Nerolidol, nerol oxide, *cis* and *trans*-linalool oxide, ethyl nonanoate, isoamyl hexanoate.

Table S7. Additional compounds (not depicted in Figure 4) in Cabernet Sauvignon wines impacted by various petiole additions, Ontario, Canada, 2016.

Compound	Cabernet Sauvignon petioles (% w/w) 2016					Trendline equation	r ² and significance level
	0	0.5	1	2	5		
<u>Esters</u>							
Ethyl isobutyrate ^a	1137.8	1645.9	827.45	875.86	720.47	$y = 35.24x^2 - 301.4x + 1340.7$	0.224 NS
Ethyl hexanoate ^a	222.64	350.37	278.45	302.91	310.30	$y = -6.09x^2 + 39.54x + 262.57$	0.085 NS
Ethyl heptanoate ^a	2.04	3.13	2.79	2.74	3.18	$y = 0.136x + 2.543$	0.100 NS
Ethyl octanoate ^a	138.17	195.25	161.80	193.04	193.42	$y = -4.25x^2 + 29.45x + 151.99$	0.179 NS
Ethyl nonanoate	3.88	3.75	2.69	0.980	1.50	$y = 0.308x^2 - 2.101x + 4.27$	0.515 *Q
Ethyl decanoate	37.55	45.82	37.16	49.65	36.97	$y = -1.538x^2 + 7.547x + 37.91$	0.184 NS
2-Phenylethyl acetate	58.57	67.30	56.80	51.69	53.26	$y = 0.866x^2 - 6.355x + 63.09$	0.121 NS
Isoamyl acetate ^a	805.61	1219.3	809.60	989.59	1100.7	$y = 33.53x + 927.95$	0.088 NS
Isobutyl acetate ^a	55.69	91.61	62.66	65.92	60.32	$y = -1.876x + 70.43$	0.019 NS
Hexyl acetate ^a	4.43	4.41	3.73	4.13	4.32	$y = 0.072x^2 - 0.375x + 4.40$	0.047 NS
Diethyl succinate	14570.5	16693.3	16840.7	15752.1	18602.5	$y = 602.76x + 15467$	0.106 NS
Isoamyl hexanoate	0.183	0.337	0.233	0.310	0.687	$y = 0.094x + 0.1908$	0.376 NS
<u>Alcohols</u>							
Isobutyl alcohol (mg/L) ^a	345.72	557.83	339.17	368.83	362.18	$y = -11.94x + 415.1$	0.025 NS
Isoamyl alcohol (mg/L) ^a	542.12	866.68	624.34	635.12	668.20	$y = -3.172x^2 + 16.41x + 658.6$	0.002 NS
Phenylethanol (mg/L) ^a	83.39	114.19	97.68	85.52	88.46	$y = -1.872x + 97.03$	0.023 NS
1-Heptanol ^a	41.69	48.19	47.19	31.43	44.14	$y = 1.404x^2 - 7.77x + 47.25$	0.181 NS
<u>Terpenes</u>							
α -Citral	1.38	1.94	1.53	1.32	1.69	$y = 0.0147x + 1.55$	0.005 NS
β -Citral	4.84	12.98	3.02	ND	13.31	$y = 0.566x^2 - 1.699x + 7.59$	0.319 NS
Limonene	0.460	0.407	0.557	3.67	2.02	$y = -0.35x^2 + 2.219x - 0.231$	0.312 NS
Nerol	0.793	1.71	1.85	3.31	6.03	$y = 1.026x + 0.995$	0.909 ***L
Nerolidol	0.290	0.547	ND	0.200	0.253	$y = 0.018x^2 - 0.132x + 0.45$	0.242 NS
Nerol oxide	0.120	0.157	0.167	0.163	0.367	$y = 0.008x^2 + 0.006x + 0.137$	0.722 ***Q
<i>trans</i> -Rose oxide	0.227	0.460	0.677	0.750	0.953	$y = 0.0965x + 0.449$	0.303 NS
γ -Terpinene	0.090	0.217	0.147	0.303	0.237	$y = -0.021x^2 + 0.131x + 0.101$	0.297 NS
<u>Norisoprenoids</u>							
α -Ionone ^a	0.390	0.707	0.673	0.463	1.64	$y = 0.060x^2 - 0.089x + 0.561$	0.797 ***Q

*, ***, NS: Significant at $p < 0.05$, 0.001, or not significant, respectively. L, Q: Linear or quadratic trends, respectively. ^a Odor-active for at least the highest petiole treatment. Thresholds for the following compounds were not available: Nerolidol, nerol oxide, *cis* and *trans*-linalool oxide, ethyl nonanoate, isoamyl hexanoate.

Table S8. Additional compounds (not depicted in Supplemental Figure S3) in Cabernet franc wines impacted by various leaf additions, Ontario, Canada, 2017.

Compound	Cabernet franc-leaves (% w/w) 2017					Trendline equation	r ² and significance level
	0	0.25	0.5	1	2		
<u>Esters</u>							
Ethyl isobutyrate ^a	492.55	661.04	640.51	474.27	609.90	y = 8.351x + 569.39	0.001 NS
Ethyl hexanoate ^a	968.00	786.98	1017.8	666.20	780.38	y = -92.76x + 913.44	0.104 NS
Ethyl heptanoate ^a	8.37	6.95	8.30	5.35	8.25	y = 2.14x ² - 4.47x + 8.53	0.189 NS
Ethyl octanoate ^a	625.26	434.16	559.73	317.62	366.88	y = 125.1x ² - 373.2x + 607.7	0.328 NS
Ethyl nonanoate	2.05	3.28	8.45	4.45	9.69	y = 3.1747x + 3.202	0.353 NS
Ethyl decanoate	176.71	137.34	151.13	87.16	93.37	y = -40.19x + 159.29	0.346 NS
2-Phenylethyl acetate	75.30	58.69	62.34	51.32	62.49	y = 15.99x ² - 37.17x + 72.91	0.235 NS
Isoamyl acetate ^a	1353.2	1163.7	1472.9	995.25	1346.9	y = -12.968x + 1276.1	0.0008 NS
Isobutyl acetate ^a	90.80	70.76	88.98	64.31	93.80	y = 28.75x ² - 60.2x + 98.9	0.269 NS
Hexyl acetate ^a	15.66	6.89	10.33	6.11	9.94	y = 6.066x ² - 14.04x + 13.87	0.302 NS
Diethyl succinate	21333.8	19875.5	18177.9	14234.5	15474.2	y = -3032.5x + 20094	0.116 NS
Isoamyl hexanoate	1.22	1.81	0.947	2.15	0.880	y = -0.714x ² + 1.305x + 1.18	0.236 NS
<u>Alcohols</u>							
Isobutyl alcohol (mg/L) ^a	534.82	530.90	716.28	497.60	569.91	y = -3.5397x + 572.56	0.0001 NS
Isoamyl alcohol (mg/L) ^a	1444.5	1268.4	1537.6	1265.5	1231.7	y = -98.399x + 1423.3	0.047 NS
Phenylethanol (mg/L) ^a	183.69	153.18	157.72	133.74	144.10	y = 27.19x ² - 72.18x + 179.7	0.220 NS
Hexanol	1138.17	1700.44	1551.60	1519.38	1428.05	y = 1311.1x + 7697	0.214 NS
1-Heptanol ^a	160.53	139.98	149.33	113.97	157.07	y = 36.03x ² - 75.47x + 162.5	0.180 NS
<u>Terpenes</u>							
α-Citral	4.23	2.85	4.03	2.83	6.65	y = 2.155x ² - 3.08x + 4.14	0.568 *Q
Limonene	0.513	0.457	0.777	0.657	1.55	y = 0.265x ² - 0.031x + 0.531	0.576 *Q
Nerol oxide	0.307	0.363	0.497	0.530	1.39	y = 0.264x ² - 0.008x + 0.344	0.896 ***Q
Nerolidol	0.593	0.820	1.00	2.52	9.14	y = 2.339x ² - 0.448x + 0.665	0.744 ***Q
Eugenol	0.777	8.74	14.28	28.01	40.36	y = 17.23x + 2.47	0.966 ****L
γ-Terpinene	0.020	0.043	0.040	0.060	0.043	y = -0.025x ² + 0.061x + 0.022	0.344 NS
<u>Norisoprenoids</u>							
β-Ionone	0.390	0.807	1.00	1.385	1.427	y = 0.7917x + 0.512	0.866 ***L

*, ***, NS: Significant at p < 0.05, 0.001, or not significant, respectively. L, Q: Linear or quadratic trends, respectively. ^a Odor-active for at least the highest leaf treatment. Thresholds for the following compounds were not available: Nerolidol, nerol oxide, *cis* and *trans*-linalool oxide, ethyl nonanoate, isoamyl hexanoate.

Table S9. Additional compounds (not depicted in Supplemental Figure 4) in Cabernet franc wines impacted by various petiole additions, Ontario, Canada, 2017.

Compound	Cabernet franc-petioles (% w/w) 2017					Trendline equation	r ² and significance level
	0	0.5	1	2	5		
<i>Esters</i>							
Ethyl isobutyrate ^a	492.55	488.18	576.34	489.97	268.91	$y = -18.48x^2 + 46.61x + 495.8$	0.331 NS
Ethyl hexanoate ^a	968.00	475.49	487.09	586.01	829.82	$y = 60.38x^2 - 293.4x + 802.8$	0.354 NS
Ethyl heptanoate ^a	8.37	4.85	4.32	5.49	9.85	$y = 0.642x^2 - 2.66x + 7.21$	0.483 *Q
Ethyl octanoate ^a	625.26	313.48	327.99	381.52	639.96	$y = 44.65x^2 - 198.4x + 524.8$	0.421 NS
Ethyl nonanoate	2.05	6.39	5.91	5.64	9.42	$y = 1.106x + 4.00$	0.446 NS
Ethyl decanoate	176.71	83.25	79.49	81.74	142.26	$y = 14.36x^2 - 72.73x + 149.48$	0.417 NS
Isoamyl acetate ^a	1353.2	762.96	881.15	1041.1	1089.7	$y = 4.780x + 1017.5$	0.0008 NS
Isobutyl acetate ^a	90.87	61.50	70.64	76.55	61.32	$y = -3.309x + 77.79$	0.078 NS
Hexyl acetate ^a	15.66	5.93	5.78	3.42	8.16	$y = 1.556x^2 - 8.77x + 13.28$	0.496 *Q
Diethyl succinate	21333.8	13729.8	11670.7	14007.7	22414.7	$y = 1454x^2 - 6518.3x + 18916$	0.274 NS
Isoamyl hexanoate	1.22	1.56	0.377	1.68	0.833	$y = -0.061x + 1.23$	0.041 NS
<i>Alcohols</i>							
Isobutyl alcohol (mg/L) ^a	534.82	530.91	479.53	426.75	295.42	$y = -49.31x + 537.3$	0.267 NS
Isoamyl alcohol (mg/L) ^a	1444.5	1011.2	908.92	915.42	1031.2	$y = 67.073x^2 - 390.8x + 1320.8$	0.307 NS
Phenylethanol (mg/L) ^a	183.69	104.16	91.64	84.81	132.66	$y = 13.81x^2 - 74.7x + 162.8$	0.353 NS
Octanol	24.40	49.47	48.89	25.33	61.20	$y = 4.0397x^2 - 13.69x + 41.61$	0.673 *Q
<i>Terpenes</i>							
α -Citral	4.23	2.14	1.79	2.06	5.60	$y = 0.479x^2 - 1.996x + 3.66$	0.579 *Q
Linalool ^a	4.07	8.16	8.79	7.23	25.82	$y = 1.803x^2 - 4.153x + 8.36$	0.809 ***Q
Geraniol ^a	13.09	31.08	31.12	24.05	129.56	$y = 6.264x^2 - 18.14x + 36.83$	0.839 ***Q
Citronellol	4.63	9.53	10.89	11.13	36.99	$y = 4.328x^2 - 7.217x + 12.86$	0.956 ***Q
Limonene	0.513	0.510	0.527	1.62	2.28	$y = 0.390x + 0.427$	0.359 NS
Nerol	7.58	3.48	4.57	7.84	31.42	$y = 5.428x + 1.75$	0.802 ***L
Nerolidol	0.593	0.197	0.027	0.167	0.27	$y = 0.061x^2 - 0.339x + 0.459$	0.236 NS
<i>cis</i> -Rose oxide ^a	0.090	0.607	1.07	1.17	6.12	$y = 0.132x^2 + 0.109x + 0.206$	0.938 ***Q
<i>Others</i>							
Methyl salicylate	1.98	11.26	12.93	22.08	115.68	$y = 4.813x^2 - 10.72x + 27.17$	0.829 ***Q
Ethyl salicylate	0.38	2.67	3.93	4.32	31.26	$y = 0.496x^2 - 0.506x + 1.019$	0.979 ***Q

*, ***, NS: Significant at $p < 0.05$, 0.001, or not significant, respectively. L, Q: Linear or quadratic trends, respectively. ^a Odor-active for at least the highest petiole treatment. Thresholds for the following compounds were not available: Nerolidol, *cis* and *trans*-linalool oxide, ethyl nonanoate, isoamyl hexanoate.

Table S10. Additional compounds (not depicted in Figure 5) in Cabernet Sauvignon wines impacted by various leaf additions, Ontario, Canada, 2017.

Compound	Cabernet Sauvignon-leaves (% w/w) 2017					Trendline equation	r ² and significance level
	0	0.25	0.5	1	2		
<i>Esters</i>							
Ethyl isobutyrate ^a	372.61	729.49	488.29	540.95	335.31	$y = -170.1x^2 + 266.2x + 474.49$	0.306 NS
Ethyl hexanoate ^a	587.45	999.33	855.02	774.08	577.63	$y = -226.1x^2 + 371.01x + 720.7$	0.427 NS
Ethyl heptanoate ^a	3.69	7.54	6.73	7.14	7.65	$y = -1.713x^2 + 4.7831x + 4.78$	0.349 NS
Ethyl octanoate ^a	420.26	602.59	512.91	429.52	338.90	$y = -71.65x^2 + 62.29x + 490.25$	0.391 NS
Ethyl nonanoate	6.74	15.46	11.71	14.51	13.22	$y = -4.277x^2 + 10.59x + 8.93$	0.339 NS
Ethyl decanoate	141.82	177.06	135.60	109.16	69.47	$y = -45.864x + 161.02$	0.753 **L
2-Phenylethyl acetate	40.98	99.12	76.42	90.22	75.77	$y = -31.34x^2 + 71.78x + 55.964$	0.392 NS
Isoamyl acetate ^a	1138.2	1700.4	1551.6	1519.4	1428.1	$y = -281.25x^2 + 609.4x + 1309.3$	0.121 NS
Isobutyl acetate ^a	69.31	141.35	90.69	92.51	80.49	$y = -17.136x^2 + 26.706x + 93.05$	0.082 NS
Hexyl acetate ^a	11.38	12.58	12.25	11.09	12.70	$y = 0.541x^2 - 0.811x + 12.03$	0.017 NS
Diethyl succinate	13450.9	65337.5	38113.1	54720.4	45743.6	$y = -22810x^2 + 54475x + 26852$	0.247 NS
Isoamyl hexanoate	0.470	1.207	0.733	0.695	0.597	$y = -0.1775x^2 + 0.278x + 0.720$	0.119 NS
<i>Alcohols</i>							
Isobutyl alcohol (mg/L) ^a	246.59	945.90	546.66	588.69	592.79	$y = -178.6x^2 + 405.82x + 469.53$	0.093 NS
Isoamyl alcohol (mg/L) ^a	1450.9	1964.5	1473.4	1664.1	1637.8	$y = -59.33x^2 + 132.16x + 1602.1$	0.005 NS
Phenylethanol (mg/L) ^a	72.71	246.93	189.36	227.85	222.44	$y = -82.66x^2 + 214.4x + 118.9$	0.434 NS
1-Heptanol ^a	86.13	184.91	142.16	194.84	172.79	$y = -57.49x^2 + 147.4x + 106.69$	0.546 *Q
<i>Terpenes</i>							
α -Citral	2.01	6.02	3.43	0.455	4.69	$y = 3.606x^2 - 7.98x + 6.00$	0.375 NS
Limonene	0.460	0.903	0.977	5.20	1.71	$y = -3.087x^2 + 7.33x - 0.365$	0.596 *Q
<i>trans</i> -Linalool oxide	20.90	20.60	41.06	69.24	116.75	$y = 50.80x + 15.61$	0.819 ***L
Nerol	1.95	9.850	10.783	18.820	29.443	$y = 12.97x + 4.4416$	0.941 ***L
Nerol oxide	0.170	0.593	0.633	1.07	1.41	$y = -0.249x^2 + 1.09x + 0.219$	0.776 **Q
Nerolidol	0.143	3.00	3.38	10.65	14.65	$y = 7.41x + 0.808$	0.895 ***L
<i>trans</i> -Rose oxide	0.093	0.100	0.640	1.45	0.507	$y = -1.01x^2 + 2.38x - 0.148$	0.811 ***Q
γ -Terpinene	0.073	0.020	0.133	0.120	0.163	$y = -0.018x^2 + 0.091x + 0.053$	0.481 *Q
<i>Norisoprenoids</i>							
α -Ionone ^a	0.613	1.360	1.517	2.210	2.257	$y = -0.734x^2 + 2.2545x + 0.679$	0.841 ***Q

*, **, ***, NS: Significant at $p < 0.05$, 0.01, 0.001, or not significant, respectively. L, Q: Linear or quadratic trends, respectively. ^a Odor-active for at least the highest leaf treatment. Thresholds for the following compounds were not available: Nerolidol, nerol oxide, *cis* and *trans*-linalool oxide, ethyl nonanoate, isoamyl hexanoate.

Table S11. Additional compounds (not depicted in Figure 6) in Cabernet Sauvignon wines impacted by various petiole additions, Ontario, Canada, 2017.

Compound	Cabernet Sauvignon petioles (% w/w) 2017					Trendline equation	r ² and significance level
	0	0.5	1	2	5		
<i>Esters</i>							
Ethyl isobutyrate ^a	372.61	576.79	529.74	366.28	596.19	$y = 10.63x^2 - 31.53x + 477.6$	0.177 NS
Ethyl hexanoate ^a	587.45	798.32	790.93	359.92	901.29	$y = 44.66x^2 - 197.6x + 753.3$	0.341 NS
Ethyl heptanoate ^a	3.69	5.96	5.98	2.76	8.54	$y = 0.36x^2 - 1.16x + 5.19$	0.502 *Q
Ethyl octanoate ^a	420.26	503.48	492.45	227.06	575.29	$y = 34.35x^2 - 160.6x + 508.9$	0.449 NS
Ethyl nonanoate	6.74	12.84	11.46	3.37	14.42	$y = 0.821x^2 - 3.43x + 10.63$	0.317 NS
Ethyl decanoate	141.82	135.39	141.43	74.44	147.96	$y = 9.61x^2 - 49.80x + 154.7$	0.523 *Q
2-Phenylethyl acetate	40.98	68.75	55.27	37.12	93.83	$y = 3.67x^2 - 11.00x + 55.67$	0.557 *Q
Isoamyl acetate ^a	1138.2	1399.8	1311.8	807.24	1614.4	$y = 71.87x^2 - 310.6x + 1347.4$	0.378 NS
Isobutyl acetate ^a	69.31	104.36	87.25	76.74	129.73	$y = 2.538x^2 - 3.98x + 84.9$	0.462 NS
Hexyl acetate ^a	11.38	9.61	8.68	3.96	9.68	$y = 1.028x^2 - 5.62x + 12$	0.566 *Q
Diethyl succinate	13450.9	46039.0	38941.0	9007.6	43986.9	$y = 1819.7x^2 - 6835x + 30896$	0.141 NS
Isoamyl hexanoate	0.470	0.640	0.633	0.277	0.650	$y = 0.033x^2 - 0.158x + 0.604$	0.255 NS
<i>Alcohols</i>							
Isobutyl alcohol (mg/L) ^a	246.59	829.91	811.49	491.01	778.82	$y = -18.89x^2 + 145.4x + 498.8$	0.129 NS
Isoamyl alcohol (mg/L) ^a	1450.9	1773.7	1750.9	695.45	1735.4	$y = 112.7x^2 - 582.7x + 1790$	0.327 NS
Phenylethanol (mg/L) ^a	72.71	205.95	182.36	50.74	232.67	$y = 9.927x^2 - 33.95x + 146.5$	0.282 NS
1-Heptanol ^a	86.13	153.67	148.21	49.64	178.86	$y = 8.938x^2 - 35.99x + 130.4$	0.328 NS
<i>Terpenes</i>							
α -Citral	2.01	3.49	3.00	1.52	4.43	$y = 0.197x^2 - 0.692x + 2.88$	0.454 NS
Limonene	0.460	3.41	2.94	1.76	1.31	$y = -0.202x^2 + 0.924x + 1.63$	0.206 NS
<i>trans</i> -Linalool oxide	20.90	74.25	89.08	39.07	552.92	$y = 34.21x^2 - 79.88x + 93.77$	0.952 ****Q
Nerol	1.95	5.13	5.24	4.20	18.78	$y = 0.651x^2 - 0.238x + 3.53$	0.879 ***Q
Nerol oxide	0.170	0.487	0.493	0.520	0.660	$y = -0.028x^2 + 0.219x + 0.265$	0.614 **Q
Nerolidol	0.143	0.137	0.177	0.297	0.480	$y = 0.072x + 0.124$	0.819 ***L
<i>trans</i> -Rose oxide	0.093	0.327	0.320	0.257	1.78	$y = 0.328x - 0.0016$	0.871 ***L
γ -Terpinene	0.073	0.103	0.147	0.033	0.160	$y = 0.008x^2 - 0.029x + 0.105$	0.321 NS
<i>Norisoprenoids</i>							
α -Ionone ^a	0.613	0.717	0.710	0.477	0.870	$y = 0.032x^2 - 0.129x + 0.703$	0.362 NS

*, **, ***, ****, NS: Significant at $p < 0.05$, 0.01, 0.001, 0.0001, or not significant, respectively. L, Q: Linear or quadratic trends, respectively. ^a Odor-active for at least the highest petiole treatment. Thresholds for the following compounds were not available: Nerolidol, nerol oxide, *cis* and *trans*-linalool oxide, ethyl nonanoate, isoamyl hexanoate.

Table S12. Composition of Cabernet franc and Cabernet Sauvignon wines impacted by various leaf and petiole additions (N=15), Ontario, Canada 2016 and 2017.

Variable	Cabernet franc-leaves (% w/w) 2016					Trendline equation	r ² and significance level
	0	0.25	0.5	1	2		
pH	3.27	3.36	3.47	3.44	3.72	$y = 0.0087x^2 + 0.186x + 3.303$	0.576 *Q
Titrateable acidity (g/L)	6.83	7.12	6.35	7.80	7.55	$y = -0.199x^2 + 0.857x + 6.698$	0.296 NS
Total phenols (mg/L)	1660.3	1474.1	1530.9	1597.2	1549.8	$y = -11.364x + 1571$	0.0005 NS
Total anthocyanins (mg/L)	106.39	134.18	125.74	118.41	93.43	$y = -21.32x^2 + 26.6x + 144.7$	0.507 *Q
Ethanol (% v/v)	12.74	13.33	13.49	13.17	13.33	$y = -0.309x^2 + 0.781x + 12.95$	0.159 NS
Variable	Cabernet franc petioles (% w/w) 2016					Trendline equation	r ² and significance level
	0	0.5	1	2	5		
pH	3.27	3.31	3.39	3.56	3.68	$y = -0.019x^2 + 0.184x + 3.247$	0.822 ***Q
Titrateable acidity (g/L)	6.83	6.63	6.21	6.73	6.40	$y = 0.015x^2 - 0.126x + 6.68$	0.102 NS
Total phenols (mg/L)	1660.3	1562.5	1442.5	1562.5	1707.7	$y = 25.11x + 1544.4$	0.014 NS
Total anthocyanins (mg/L)	106.39	143.31	132.05	100.42	133.59	$y = 3.126x^2 - 12.73x + 154.5$	0.136 NS
Ethanol (% v/v)	12.74	12.94	12.14	12.72	12.50	$y = -0.039x + 12.67$	0.019 NS
Variable	Cabernet franc leaves (% w/w) 2017					Trendline equation	r ² and significance level
	0	0.25	0.5	1	2		
pH	3.57	3.63	3.73	3.61	3.79	$y = 0.069x^2 - 0.081x + 3.67$	0.606 **Q
Titrateable acidity (g/L)	7.48	6.69	6.21	6.91	6.16	$y = -0.227x + 6.7207$	0.122 NS
Total phenols (mg/L)	871.14	940.56	1006.8	1215.1	1028.9	$y = -217.37x^2 + 528.49x + 850.9$	0.194 NS
Total anthocyanins (mg/L)	843.46	724.71	615.42	694.79	537.33	$y = -90.77x + 730.8$	0.233 NS
Ethanol (% v/v)	12.38	12.52	12.73	12.73	12.02	$y = -0.005x^2 + 0.009x + 0.124$	0.375 NS
Variable	Cabernet franc petioles (% w/w) 2017					Trendline equation	r ² and significance level
	0	0.5	1	2	5		
pH	3.57	3.63	3.66	3.73	3.80	$y = 0.034x + 3.64$	0.511 *L
Titrateable acidity (g/L)	7.48	6.33	6.43	6.19	5.17	$y = -0.299x + 6.69$	0.399 NS
Total phenols (mg/L)	871.14	937.41	905.85	1237.2	681.80	$y = -61.30x^2 + 279.66x + 825.9$	0.251 NS
Total anthocyanins (mg/L)	843.46	652.67	818.06	663.67	596.41	$y = -28.42x + 742.8$	0.109 NS
Ethanol (% v/v)	12.38	12.44	12.32	12.51	11.16	$y = -0.0009x^2 + 0.002x + 0.124$	0.624 **Q
Variable	Cabernet Sauvignon-leaves (% w/w) 2016					Trendline equation	r ² and significance level
	0	0.25	0.5	1	2		
pH	3.33	3.51	3.65	3.63	3.73	$y = 0.087x^2 - 0.075x + 3.01$	0.639 **Q
Titrateable acidity (g/L)	7.41	6.83	7.66	7.69	7.53	$y = -0.265x^2 + 0.727x + 7.16$	0.251 NS
Total phenols (mg/L)	1477.2	1540.4	3412.3	2196.9	1922.3	$y = -1052.7x^2 + 2259.7x + 1533.6$	0.256 NS
Total anthocyanins (mg/L)	129.15	149.27	144.67	128.30	89.51	$y = -47.689x + 189.85$	0.789 ***L
Ethanol (% v/v)	14.49	14.75	14.50	14.03	14.31	$y = 0.265x^2 - 0.738x + 14.69$	0.258 NS
Variable	Cabernet Sauvignon petioles (% w/w) 2016					Trendline equation	r ² and significance level
	0	0.5	1	2	5		
pH	3.33	3.56	3.61	3.78	3.84	$y = -0.024x^2 + 0.065x + 3.186$	0.660 **Q
Titrateable acidity (g/L)	7.41	6.64	6.51	8.08	6.85	$y = -0.094x^2 + 0.488x + 6.838$	0.115 NS
Total phenols (mg/L)	1477.2	1376.2	1811.8	1925.5	1843.4	$y = -58.09x^2 + 381.9x + 1389.1$	0.368 NS
Total anthocyanins (mg/L)	129.15	163.42	131.71	154.22	195.90	$y = 3.43x^2 - 5.72x + 188.75$	0.518 *Q
Ethanol (% v/v)	14.49	14.60	14.52	14.22	13.72	$y = -0.177x + 14.61$	0.701 ***L

Variable	Cabernet Sauvignon leaves (% w/w) 2017					Trendline equation	r ² and significance level
	0	0.25	0.5	1	2		
pH	3.66	3.76	3.80	3.90	3.94	$y = -0.097x^2 + 0.3297x + 3.669$	0.794 ***Q
Titrateable acidity (g/L)	6.21	6.02	6.28	6.35	6.28	$y = -0.104x^2 + 0.294x + 6.12$	0.124 NS
Total phenols (mg/L)	1536.9	1600.1	1028.9	1366.6	1514.9	$y = 309.2x^2 - 627.6x + 1551.7$	0.149 NS
Total anthocyanins (mg/L)	1199.9	1202.1	986.26	1173.8	1036.4	$y = -63.44x + 1167.3$	0.051 NS
Ethanol (% v/v)	11.95	12.29	12.44	12.54	12.83	$y = -0.002x^2 + 0.008x + 0.120$	0.438 NS
Variable	Cabernet Sauvignon petioles (% w/w) 2017					Trendline equation	r ² and significance level
	0	0.5	1	2	5		
pH	3.66	3.77	3.81	3.92	4.07	$y = 0.0767x + 3.715$	0.845 ***L
Titrateable acidity (g/L)	6.21	6.17	5.96	5.85	5.85	$y = 0.039x^2 - 0.273x + 6.238$	0.472 NS
Total phenols (mg/L)	1536.9	1230.9	1401.3	1123.6	1350.8	$y = 46.79x^2 - 262.39x + 1491.7$	0.299 NS
Total anthocyanins (mg/L)	1199.9	1082.2	1211.7	1141.4	1151.7	$y = -2.75x + 1162$	0.0007 NS
Ethanol (% v/v)	11.95	12.37	12.07	11.84	12.04	$y = 0.0002x^2 - 0.0014x + 0.122$	0.021 NS

*, **, ***, NS: Significant at $p < 0.05$, 0.01, 0.001, or not significant, respectively. L, Q: Linear or quadratic trends, respectively.