

SUPPLEMENTARY TABLE 1

Volatile standards for quantification of aroma compounds in Ontario Pinot gris, Riesling, Cabernet franc, and Cabernet Sauvignon wines, 2011 and 2012.

Compound	CAS #	RT ^a	m/z Ions	Calibration ranges (mg/L)	r ²	Odour description ^b	Odour threshold µg/L ^c
<u>Esters</u>							
Ethyl acetate	141-78-6	6.7	43, 44, 42	500, 250, 100	0.999	Pineapple	7 500
Ethyl butyrate	105-54-4	12.6	71, 73, 70	5, 1.5, 0	0.998	Apple	20
Ethyl caproate	123-66-0	19.7	88, 99, 101	50, 10, 1	0.999	Apple peel, fruit	5
Ethyl caprylate	106-32-1	29.35	88, 101, 73	100, 50, 10	0.988	Fruit, fat	2
Ethyl heptanoate	106-30-9	25.3	88, 97, 89	50, 10, 1	0.999	Fruit	2 ⁽¹⁾
Ethyl decanoate	110-38-3	35.8	88, 89, 85	10, 1, 0.1	0.994	Grape	200 ⁽²⁾
Ethyl phenyl acetate	101-97-3	33.6	91, 92, 89	10, 1, 0.1	0.994	Fruit, sweet	4 ⁽³⁾
2-Phenylethyl acetate	103-45-7	33.9	104, 105, 103	100, 50, 10	0.966	Rose, honey, tobacco	250
Isoamyl acetate	123-92-2	15.7	43, 42, 44	50, 10, 1	0.972	Banana	30
Hexyl acetate	142-92-7	21	43, 42, 44	100,50,10	1	Fruit, herb	2 ⁽⁴⁾
Diethyl succinate	123-25-1	30.5	101, 129, 73	50, 10, 1	0.992	Wine, fruit	200 000 ⁽⁵⁾
<u>Alcohols</u>							
Isoamyl alcohol	123-51-3	12.8	41, 42, 43	5 000, 2 500, 1 000	0.951	Whiskey, malt, burnt	30 000
Isobutyl alcohol	78-83-1	9.1	43, 42, 41	5 000, 2 500, 1 000	0.975	Wine solvent, bitter	40 000
Phenylethanol	60-12-08	33	91, 92, 93	100, 50, 10	0.986	Honey, spice, rose, lilac	10 000
1-Hexanol	111-27-3	18.4	56, 55, 57	100,75,50	0.988	Resin, flower, green	8 000
1-Octanol	111-87-5	26.2	56, 55, 57	50, 10, 1	0.991	Chemical, metal, burnt	110 ⁽⁶⁾
1-Heptanol	111-70-6	22.3	70, 41, 56	50, 10, 1	0.999	Chemical, green	98 ⁽³⁾
1-Nonanol	143-08-8	30.1	56, 55, 57	50, 10, 1	0.998	Fat, green	50 ⁽⁶⁾
<u>Acids</u>							
Hexanoic acid	142-62-1	30.5	60, 61, 59	100, 50, 10	0.973	Sweat	3 000
Octanoic acid	124-07-2	35	60, 61, 59	50, 10, 1	0.978	Sweat, cheese	500 ⁽²⁾
Decanoic acid	334-48-5	36.7	73, 71, 74	100, 50, 10	0.974	Rancid, fat	15 000
<u>Aldehydes</u>							
Decanal	112-31-2	30.05	57, 55, 56	50, 10, 1	0.999	Soap, orange peel, tallow	2 ⁽⁶⁾
Benzaldehyde	100-52-7	23.1	106, 105, 107	10, 1, 0.1	0.998	Almond, burnt sugar, cherry, pistachio	350 ⁽⁶⁾
Nonyl aldehyde	124-19-6	25.9	57, 56, 55	50, 10, 1	0.999	Fat, citrus, green	1 ⁽⁶⁾

SUPPLEMENTARY TABLE 1 (CONTINUED)

Compound	CAS #	RT ^a	m/z Ions	Calibration ranges (mg/L)	r ²	Odour description ^b	Odour threshold µg/L ^c
<u>Terpenes</u>							
β-Citronellol	106-22-9	32.7	69, 68, 70	10, 1, 0.1	0.972	Rose	100
Geraniol	106-24-1	34	69, 68, 70	50, 10, 1	1	Rose, geranium	30
Linalool	78-70-6	26.9	71, 72, 70	50, 10, 1	0.971	Flower, lavender	15
α-Terpineol	98-55-5	31.4	59, 60, 61	50, 10, 1	0.996	Oil, anise, mint	330 ⁽¹⁾
Terpinolene	586-62-9	24.5	93, 136, 121	10, 1, 0.1	0.999	Pine, plastic	200 ⁽⁷⁾
<u>Norisoprenoids</u>							
β-Damascenone	23726-93-4	36.2	69, 121, 190	0.5, 0.1, 0	0.991	Apple, rose, honey	0.05
<u>Other</u>							
Diethyl acetal	105-57-7	9.5	45, 73, 103	5 000, 2 500, 1 000	0.999	Fruit, cream	50

^a Retention time. ^b Odour description from Flavornet database (www.flavornet.org). ^c Odour 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⁾ Ruth (1986); ⁽⁴⁾ Buttery *et al.* (1982); ⁽⁵⁾ Etievant (1991), determined in 12% water/ethanol mix; ⁽⁶⁾ Buttery *et al.* (1988), in water; ⁽⁷⁾ Buttery *et al.* (1968), in water.

SUPPLEMENTARY TABLE 2

List of aroma/flavour sensory standards used in the descriptive analysis of Riesling, Pinot gris, Cabernet franc and Cabernet Sauvignon wines, Niagara Peninsula, Ontario, 2011 and 2012.

Riesling	
Citrus	100 drops of RealLime and RealLemon concentrated lime and lemon juices + 6 g each of grated orange, tangerine and grapefruit skin
Apple/pear	80 g sliced Empire apple + 70 g sliced Bartlett pear
Green apple	100 g sliced Granny Smith apple
Peach/apricot	150 mL No Name apricot juice + 80 mL of Yoga peach juice
Floral	Late harvest Gewürztraminer wine dominated by floral characteristics, 1998 Konzelmann Estate Winery, Niagara Peninsula
Mango	125 mL Rubicon mango drink
Grassy	10 g of freshly cut grass
Honey	20 g Billybee mixed flowers honey
Vanilla	Vanilla bean soaked for 24 hr
Petrol	Riesling wine dominated by petrol characteristics, 1999 Vineland Estates, Niagara Peninsula
Pinot gris	
Lemon	10 g lemon zest (grated lemon peel)
Pear	50 mL Gerber pears
Floral	One drop of <i>cis</i> -rose oxide
Honey	20 g Billybee mixed flowers honey
Bread	10 g baguette (blended prior to addition to wine)
Cabernet franc, Cabernet Sauvignon	
Red fruit (red cherry, raspberry, cranberry, strawberry)	5 mL each of fresh strawberry/raspberry/cherry juices (squeezed through cheesecloth)
Dark fruit (black cherry, blueberry, plum, blackcurrant)	50 mL R. W. Knudsen black cherry juice + 100 mL Ribena Original blackcurrant beverage
Dried fruit (prune, raisin, cooked fruit)	100 g Sunmaid crushed raisins + 100 g Smucker's wildberry jam + 50 mL No Name prune nectar
Bell pepper	5 g fresh green bell pepper
Vegetal (green bean)	50 mL juice from My Compliments canned green beans
Herbaceous (green, weedy, straw)	5 g cat grass + 5 g President's Choice green tea
Spicy (allspice, anise, black pepper)	0.5 g black pepper + 0.05 g anise + 0.05 g allspice
Earthy	2 g locally sourced deciduous leaf litter (mainly maple)

Except for actual wines used as standards, all standards were up made in advance of training in 500 mL of non-oaked, neutral Riesling and Cabernet franc base wines and stored in a 4°C controlled environment. All standards were presented as 30 mL samples in ISO wine glasses. Standards represented the "high intensity" anchor term at the far right end of the respective line scales (15 cm).

SUPPLEMENTARY TABLE 3

Impact of crop level and harvest date on aroma (lowercase) and flavour (uppercase) descriptors of Pinot gris wines in 2011 and 2012, Pondview Estate Winery, Virgil, ON.

2011										
Descriptor	Crop level		Signifi- cance	Harvest date ^a			Signifi- cance	Inter- action	JXC ^c	JXHD ^c
	Full	Half		T0 ^b	T1	T2				
<i>Aroma</i>										
Lemon	3.82	3.89	NS	4.61a	3.94ab	3.01b	0.019	NS	NS	NS
Pear	5.01	5.19	NS	5.48	4.73	5.08	NS	NS	NS	NS
Floral	6.17	6.41	NS	5.95	6.64	6.28	NS	NS	NS	NS
Honey	6.95	6.64	NS	4.88c	7.01b	8.50a	< 0.0001	NS	NS	NS
Bread	3.34	2.87	NS	2.75	3.54	3.04	NS	NS	NS	NS
<i>Flavour</i>										
LEMON	6.62	6.95	NS	7.14	7.13	6.08	NS	NS	NS	NS
PEAR	4.60	4.66	NS	4.29	4.64	4.96	NS	NS	NS	NS
FLORAL	4.59	4.56	NS	4.29	4.84	4.60	NS	NS	NS	NS
HONEY	3.96	4.38	NS	3.39b	4.02ab	5.09a	0.018	NS	NS	NS
BREAD	2.43	2.42	NS	2.53	2.25	2.50	NS	NS	NS	NS
ACIDITY	7.19	6.97	NS	7.04	7.29	6.92	NS	NS	NS	NS
BODY	5.61	6.23	0.045	5.22b	6.25a	6.27a	0.007	NS	NS	NS
LENGTH	6.88	7.16	NS	5.78b	7.64a	7.65a	< 0.0001	NS	NS	0.005
2012										
Descriptor	Crop level		Signifi- cance	Harvest date			Signifi- cance	Inter- action	JXC	JXHD
	Full	Half		T0	T1	T2				
<i>Aroma</i>										
Lemon	4.42	4.06	NS	3.70	4.53	4.50	NS	NS	NS	0.046
Pear	5.92	5.23	NS	5.35	5.32	6.06	NS	NS	NS	NS
Floral	6.67	6.14	NS	5.66b	6.04b	7.51a	0.005	NS	NS	NS
Honey	5.31	5.83	NS	4.68b	4.66b	7.38a	< 0.0001	NS	NS	NS
Bread	2.79	3.34	NS	3.82a	3.27a	2.10b	0.007	NS	0.012	0.007
<i>Flavour</i>										
LEMON	6.79	5.74	0.036	6.65	6.51	5.64	NS	NS	NS	NS
PEAR	5.24	5.88	NS	5.97a	4.73b	5.99a	0.012	0.009	NS	NS
FLORAL	4.19	4.24	NS	3.67b	3.94b	5.02a	0.014	NS	NS	NS
HONEY	4.87	4.84	NS	3.42b	3.77b	7.38a	< 0.0001	NS	NS	0.0007
BREAD	2.12	2.76	0.047	2.70a	2.73a	1.89b	0.050	NS	NS	0.027
ACIDITY	7.30	6.64	0.032	7.03	7.30	6.58	NS	NS	< 0.0001	NS
BODY	6.48	6.51	NS	5.97b	5.89b	7.63a	< 0.0001	NS	NS	0.038
LENGTH	6.90	7.18	NS	6.24b	6.54b	8.33a	< 0.0001	NS	NS	0.019

^a Means followed by different letters are significantly different, $p < 0.05$, Duncan's multiple range test.

^b T0, T1, T2: Normal commercial harvest, three weeks after T0, six weeks after T0 respectively.

^c JXC, JXHD: Judge x crop level and judge x harvest date interactions respectively.

SUPPLEMENTARY TABLE 4

Impact of crop level and harvest date on aroma (lowercase) and flavour (uppercase) descriptors of Riesling wines in 2011 and 2012, Pondview Estate Winery, Virgil, ON.

2011								
Descriptor	Crop level		Harvest date ^a			Interaction	JXC ^c	JXHD ^c
	Full	Half	Significance	T0 ^b	T1			
<i>Aroma</i>								
Citrus	4.96	5.32	NS	5.96	4.56	4.90	NS	NS
Apple/pear	5.47	5.27	NS	4.58b	6.59a	4.94b	0.005	NS
Green apple	3.40	3.86	NS	4.58a	3.27b	3.11b	0.039	0.001
Peach/apricot	4.38	4.43	NS	2.90b	3.41b	6.90a	< 0.0001	NS
Floral	4.87	4.45	NS	4.96	4.21	4.80	NS	NS
Mango	2.92	2.93	NS	2.31b	1.91b	4.55a	< 0.0001	NS
Grassy	2.88	3.21	NS	4.00a	2.50b	2.63b	0.004	0.036
Honey	4.84	4.22	NS	2.24b	5.43a	5.91a	< 0.0001	< 0.0001
Vanilla	3.20	3.00	NS	2.69	3.51	3.10	NS	NS
Petrol	3.27	3.76	NS	3.29	4.17	3.07	NS	NS
<i>Flavour</i>								
CITRUS	7.31	8.12	NS	7.90	7.81	7.43	NS	NS
APPLE/PEAR	6.69	5.31	0.001	5.76b	6.89a	5.34b	0.007	NS
GREEN APPLE	5.29	5.98	NS	6.18a	6.07a	4.66b	0.050	NS
PEACH/APRICOT	4.79	3.57	0.015	3.84b	3.12b	5.59a	0.001	NS
FLORAL	3.53	3.45	NS	3.25	3.39	3.85	NS	0.031
MANGO	3.36	3.02	NS	3.36a	2.11b	4.10a	0.001	NS
GRASSY	2.41	2.95	NS	2.39	2.74	2.91	NS	NS
HONEY	3.92	2.48	0.001	2.79	2.83	3.98	NS	NS
VANILLA	2.61	1.85	NS	2.14	1.89	2.65	NS	NS
PETROL	2.29	2.86	NS	2.50	2.62	2.61	NS	NS
SWEETNESS	5.61	3.50	< 0.0001	5.47a	4.18b	4.01b	0.015	0.012
ACIDITY	6.93	8.76	< 0.0001	7.05b	8.46a	8.03a	0.019	0.049
BODY	6.16	5.35	NS	5.17b	5.69ab	6.41a	0.050	NS
LENGTH	6.91	6.64	NS	6.02b	6.53ab	7.77a	0.022	NS

SUPPLEMENTARY TABLE 4 (CONTINUED)

2012								
Descriptor	Crop level		Harvest date			Interaction	JXC	JXHD
	Full	Half	Significance	T0	T1			
Aroma								
Citrus	5.55	5.98	NS	5.36	5.89	6.04	NS	NS
Apple/pear	4.96	5.29	NS	4.42	5.18	5.78	NS	NS
Green apple	4.66	4.93	NS	4.86	4.53	4.99	NS	NS
Peach/apricot	4.79	4.83	NS	3.36b	4.29b	6.78a	< 0.0001	NS
Floral	5.33	6.28	NS	4.63b	5.90ab	6.89a	0.016	0.025
Mango	3.05	3.41	NS	2.53b	2.89b	4.29a	0.0007	NS
Grassy	3.41	3.12	NS	3.85	3.08	2.87	NS	NS
Honey	3.12	2.57	NS	2.75	2.12	3.66	NS	NS
Vanilla	2.87	2.57	NS	2.56	2.68	2.91	NS	NS
Petrol	2.03	2.02	NS	2.12	2.24	1.73	NS	NS
Flavour								
CITRUS	7.02	6.23	NS	6.99	7.03	5.85	NS	NS
APPLE/PEAR	5.74	5.63	NS	5.53ab	5.14b	6.38a	0.050	NS
GREEN APPLE	6.01	5.36	NS	5.99	6.22	4.84	NS	NS
PEACH/APRICOT	5.92	5.83	NS	5.29b	5.23b	7.10a	0.001	NS
FLORAL	4.29	4.73	NS	3.69b	4.33b	5.51a	0.002	NS
MANGO	3.38	3.78	NS	2.75b	4.09a	3.90a	0.024	0.0006
GRASSY	1.86	1.58	NS	1.89	1.96	1.30	NS	NS
HONEY	3.08	2.73	NS	2.73b	2.01b	3.98a	0.0009	NS
VANILLA	2.29	2.14	NS	1.87b	2.07ab	2.70a	0.050	NS
PETROL	1.16	1.16	NS	0.93	1.27	1.28	NS	NS
SWEETNESS	6.48	6.89	NS	6.38b	6.20b	7.47a	0.018	0.039
ACIDITY	6.75	6.06	0.014	6.70a	6.61a	5.89b	0.035	NS
BODY	5.91	6.14	NS	5.79	5.92	6.36	NS	NS
LENGTH	6.34	6.38	NS	6.24	6.28	6.56	NS	NS

^a Means followed by different letters are significantly different, $p < 0.05$, Duncan's multiple range test.^b T0, T1, T2: Normal commercial harvest, three weeks after T0, six weeks after T0 respectively.^c JXC, JXHD: Judge x crop level and judge x harvest date interactions respectively.

SUPPLEMENTARY TABLE 5

Impact of crop level and harvest date on aroma (lowercase) and flavour (uppercase) descriptors of Cabernet Franc wines in 2011 and 2012, Pondview Estate Winery, Virgil, ON.

Descriptor	2011						Interaction	JXC ^c	JXHD ^c
	Crop level		Harvest date ^a		Significance				
	Full	Half	T0	T1		T2			
<i>Aroma</i>									
Red fruit	6.29	5.43	6.70a	6.26a	4.62b	< 0.0001	NS	0.020	0.019
Dark fruit	6.53	6.16	6.42ab	6.89a	5.72b	0.025	0.028	NS	NS
Dried fruit	6.37	7.09	5.70b	5.51b	8.99a	< 0.0001	NS	NS	0.023
Bell pepper	2.76	2.41	2.71	2.81	2.25	NS	NS	NS	NS
Vegetal	3.49	3.45	3.27	3.65	3.49	NS	NS	NS	0.15
Herbaceous	3.13	3.18	3.14a	3.55a	2.78b	0.050	NS	NS	0.011
Spicy	4.67	4.52	4.30	5.01	4.48	NS	NS	NS	NS
Earthy	2.80	3.61	2.56b	2.95b	4.10a	< 0.0001	NS	NS	NS
<i>Flavour</i>									
RED FRUIT	6.58	5.74	6.92a	6.73a	4.83b	< 0.0001	0.021	NS	NS
DARK FRUIT	6.28	6.06	6.05ab	6.60a	5.86b	NS	0.043	NS	NS
DRIED FRUIT	6.41	6.99	5.23b	5.98b	8.89a	< 0.0001	NS	NS	< 0.0001
BELL PEPPER	2.93	3.09	3.41	2.70	2.92	NS	NS	NS	NS
HERBACEOUS	3.00	3.01	3.15	3.09	2.79	NS	NS	NS	NS
SPICY	5.70	5.88	5.29b	6.23a	5.85ab	0.50	NS	NS	NS
ASTRINGENCY	6.77	6.98	6.37b	7.65a	6.61b	0.002	NS	NS	NS
ACIDITY	7.46	7.06	7.11b	7.73a	6.93b	0.031	NS	NS	NS
BITTERNESS	6.18	6.47	5.75	6.30	6.91	NS	NS	NS	NS
BODY	6.85	6.87	6.39b	7.23a	6.94ab	0.040	NS	NS	NS
LENGTH	7.50	7.63	7.19	7.93	7.58	NS	NS	NS	NS

SUPPLEMENTARY TABLE 5 (CONTINUED)

Descriptor	2012					
	Crop level		Harvest date		Interaction	JXC ^c
	Full	Half	Significance	T0	T1	T2 ^d
Aroma						
Red fruit	5.91	6.73	0.037	5.76	6.88	---
Dark fruit	6.34	6.89	NS	5.75	7.48	---
Dried fruit	5.91	5.44	NS	5.44	5.91	---
Bell pepper	2.81	2.75	NS	2.93	2.63	---
Vegetal	4.01	3.02	0.033	4.05	2.98	---
Herbaceous	3.53	3.33	NS	3.62	3.24	---
Spicy	4.57	4.88	NS	4.40	5.05	---
Earthy	3.36	2.61	NS	3.58	2.39	---
Flavour						
RED FRUIT	6.14	7.07	0.041	6.50	6.70	---
DARK FRUIT	6.17	6.48	NS	5.83	6.81	---
DRIED FRUIT	5.73	4.78	0.031	4.86	5.65	---
BELL PEPPER	3.11	3.00	NS	3.33	2.79	---
HERBACEOUS	3.31	3.05	NS	3.30	3.06	---
SPICY	5.71	5.82	NS	5.50	6.03	---
ASTRINGENCY	6.73	7.01	NS	6.63	7.10	---
ACIDITY	7.46	7.52	NS	7.48	7.50	---
BITTERNESS	5.68	5.72	NS	5.57	5.83	---
BODY	7.18	7.24	NS	7.02	7.40	---
LENGTH	7.33	7.81	NS	7.43	7.70	---

^a Means followed by different letters are significantly different, $p < 0.05$, Duncan's multiple range test.^b T0, T1, T2: Normal commercial harvest, three weeks after T0, six weeks after T0 respectively.^c JXC, JXHD: Judge x crop level and judge x harvest date interactions respectively.^d Insufficient volumes of T2 wines were available in 2012 for sensory descriptive analysis.

SUPPLEMENTARY TABLE 6

Impact of crop level and harvest date on aroma (lowercase) and flavour (uppercase) descriptors of Cabernet Sauvignon wines in 2011 and 2012, Pondview Estate Winery, Virgil, ON.

Descriptor	Crop level		2011				Interaction	JXC ^c	JXHD ^c
			Harvest date ^a						
	Full	Half	Significance	T0	T1	T2			
<i>Aroma</i>									
Red fruit	5.26	4.86	NS	5.91a	5.76a	3.50b	< 0.0001	NS	< 0.0001
Dark fruit	6.41	6.93	NS	7.03a	7.34a	5.65b	0.004	NS	0.0002
Dried fruit	7.50	7.80	NS	5.91c	7.06b	9.99a	< 0.0001	NS	< 0.0001
Bell pepper	2.27	2.02	NS	2.46	2.29	1.69	NS	0.017	NS
Vegetal	3.22	3.32	NS	3.50	3.28	3.02	NS	NS	0.004
Herbaceous	3.44	3.20	NS	3.63a	3.70a	2.63b	0.028	NS	0.049
Spicy	6.00	6.10	NS	6.18	5.82	6.15	NS	NS	NS
Earthy	2.93	3.04	NS	2.16b	2.35b	4.45a	< 0.0001	NS	NS
<i>Flavour</i>									
RED FRUIT	5.69	5.35	NS	6.15a	6.18a	4.23b	< 0.0001	NS	NS
DARK FRUIT	5.77	6.75	0.018	6.40	6.62	5.76	NS	NS	0.002
DRIED FRUIT	7.09	7.64	NS	5.81c	7.13b	9.15a	< 0.0001	NS	< 0.0001
BELL PEPPER	2.43	2.67	NS	2.71	2.77	2.17	NS	NS	NS
HERBACEOUS	2.96	3.13	NS	3.28a	3.57a	2.28b	0.003	NS	NS
SPICY	6.69	6.12	NS	6.54	6.65	6.03	NS	NS	0.002
ASTRINGENCY	7.80	8.06	NS	7.75b	9.16a	6.89c	< 0.0001	NS	NS
ACIDITY	8.23	7.97	NS	8.38	8.23	7.69	NS	NS	0.025
BITTERNESS	6.29	6.55	NS	5.88b	6.89a	6.51ab	0.011	NS	NS
BODY	8.06	7.62	NS	7.35b	8.25a	7.95ab	0.052	NS	0.015
LENGTH	8.45	8.40	NS	7.80b	9.12a	8.37ab	0.014	NS	NS

SUPPLEMENTARY TABLE 6 (CONTINUED)

Descriptor	2012						
	Crop level		Harvest date		Interaction	JXC ^c	JXHD ^c
	Full	Half	Significance	T0	T1	T2 ^d	Significance
<i>Aroma</i>							
Red fruit	5.17	5.71	NS	5.50	5.39	----	NS
Dark fruit	8.07	7.82	NS	7.36	8.53	----	0.003
Dried fruit	6.00	5.80	NS	6.05	5.75	----	NS
Bell pepper	1.69	1.71	NS	1.72	1.67	----	NS
Vegetal	2.49	2.54	NS	2.71	2.32	----	NS
Herbaceous	3.15	3.44	NS	3.16	3.43	----	NS
Spicy	6.01	6.60	NS	6.23	6.38	----	NS
Earthy	2.40	2.64	NS	2.38	2.66	----	NS
<i>Flavour</i>							
RED FRUIT	5.61	5.87	NS	5.89	5.60	----	NS
DARK FRUIT	8.31	7.70	NS	7.66	8.35	----	0.044
DRIED FRUIT	6.31	6.32	NS	6.50	6.13	----	NS
BELL PEPPER	1.84	2.02	NS	1.97	1.89	----	NS
HERBACEOUS	2.73	2.61	NS	2.60	2.75	----	NS
SPICY	7.14	6.60	NS	6.64	7.10	----	NS
ASTRINGENCY	9.16	8.16	0.019	8.17	9.14	----	0.022
ACIDITY	8.42	8.11	NS	8.25	8.28	----	NS
BITTERNESS	7.45	6.62	0.009	6.99	7.07	----	NS
BODY	9.25	8.59	NS	8.76	9.08	----	NS
LENGTH	9.57	8.66	0.038	9.07	9.16	----	NS

^a Means followed by different letters are significantly different, $p < 0.05$, Duncan's multiple range test.^b T0, T1, T2: Normal commercial harvest, three weeks after T0, six weeks after T0 respectively.^c JXC, JXHD: Judge x crop level and judge x harvest date interactions respectively.^d Insufficient volumes of T2 wines were available in 2012 for sensory descriptive analysis.