

# Supplementary Materials

## Determination of Selected Aromas in Marquette and Frontenac Wine Using Headspace-SPME Coupled with GC-MS and Simultaneous Olfactometry

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**Table S1.** Summary of published aroma descriptors and relative concentrations of 58 VOCs detected in the headspace of Marquette and Frontenac wines produced from grapes harvested at 22 and 24 °Brix.

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2	
				#	+					2	4	
1	Acetaldehyde	75-07-0	2.8	Pungent, Ethereal, Aldehydic, Fruity	Pungent, Ether	1	0.0032					x
						1	0.0014			x		
						2	0.0014			x		
						2	0.0032				x	
						3	0.0009		x			
						3	0.0014			x		
						3	0.0032				x	
2	Methyl acetate	79-20-9	3.4	Ethereal		1	0.0032					x
						1	0.0008	x				
						2	0.0008	x				
						2	0.0032				x	
						3	0.0008			x		
						3	0.0032				x	
3	2-nitropropane	79-46-9	3.5			3	0.0006	x				
4	Isobutyraldehyde	78-84-2	3.5	Spicy	Pungent, Malt, Green	2	0.0009	x				
5	Ethanol	64-17-5	3.9	Alcoholic	Sweet	1	5.0269	x				
						1	4.2713			x		
						1	7.7380				x	
						1	9.1890		x			
						2	7.7380				x	
						2	4.2713			x		
						2	9.1890		x			
						2	5.0269	x				
						3	4.2713			x		

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2
				#	+					2	4
						3	5.0269	x			
						3	9.1890		x		
						3	7.7380				x
6	Ethyl acetate	141-78-6	4.2	Ethereal, Fruity, Sweet, Weedy, Green	Pineapple	1	1.4347				x
						1	1.7006		x		
						1	0.8908			x	
						1	0.9832	x			
						2	0.9832	x			
						2	0.8908			x	
						2	1.7006		x		
						2	1.4347				x
						3	0.8908			x	
						3	0.9832	x			
						3	1.7006		x		
						3	1.4347				x
7	Acetic acid ethenyl ester	108-05-4	4.7			1	0.0133				x
						1	0.0172		x		
						2	0.0017			x	
						2	0.0172		x		
						3	0.0172		x		
						3	0.0133				x
8	Methylbutanal	590-86-3	4.9	Ethereal, Aldehydic, Chocolate, Peach, Fatty	Malt	1	0.0101	x			
						1	0.0023			x	
						2	0.0101	x			
						2	0.0023			x	
						3	0.0023			x	

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2
				#	+					2	4
						3	0.0101	x			
9	1,1-dimethylhydrazine	57-14-7	5.2			1	0.0988	x			
						1	0.1259			x	
						1	0.1870				x
						1	0.2435		x		
						2	0.1259			x	
						2	0.1870				x
						2	0.2435		x		
						2	0.0988	x			
						3	0.1259			x	
						3	0.0988	x			
						3	0.2435		x		
						3	0.1870				x
10	n-Propyl acetate	109-60-4	6.0	Solvent, Celery, Fruity, Fusel, Raspberry, Pear		1	0.0073			x	
						1	0.0075		x		
						1	0.0027	x			
						2	0.0073			x	
						2	0.0075		x		
						3	0.0118			x	
						3	0.0075		x		
11	Isobutanol	78-83-1	6.2	Ethereal, Winey	Wine, Solvent, Bitter	1	0.3571	x			
						1	0.6141				x
						1	0.2318			x	
						1	0.5439		x		
						2	0.2318			x	
						2	0.6141				x

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2
				#	+					2	4
						2	0.5439		x		
						2	0.3571	x			
						3	0.2318			x	
						3	0.3571	x			
						3	0.5439		x		
						3	0.6141				x
12	Ethyl isobutyrate	97-62-1	6.7	Sweet, Ethereal, Fruity, Alcoholic, Fusel, Rummy	Sweet, Rubber	1	0.0228				x
						1	0.0152	x			
						1	0.0176			x	
						1	0.0408		x		
						2	0.0176			x	
						2	0.0408		x		
						2	0.0228				x
						2	0.0152	x			
						3	0.0176			x	
						3	0.0152	x			
						3	0.0228				x
						3	0.0408		x		
13	1-butanol	71-36-3	7.2	Fermented	Medicine, Fruit	1	0.0025	x			
						1	0.0106				x
						1	0.0029			x	
						1	0.0107		x		
						2	0.0029			x	
						2	0.0025	x			
						2	0.0107		x		
						3	0.0029			x	

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2
				#	+					2	4
						3	0.0025	x			
						3	0.0107		x		
						3	0.0114				x
14	Isobutyl acetate	110-19-0	7.3	Sweet, Fruity, Ethereal, Banana, Tropical	Fruit, Apple, Banana	1	0.0049				x
						1	0.0018	x			
						1	0.0035			x	
						1	0.0074		x		
						2	0.0049				x
						2	0.0035			x	
						2	0.0018	x			
						2	0.0074		x		
						3	0.0035			x	
						3	0.0018	x			
						3	0.0049				x
						3	0.0074		x		
15	Ethyl butyrate	105-54-4	8.0	Fruity, Juicy fruit, Pineapple, Cognac	Apple	1	0.1138				x
						1	0.0667	x			
						1	0.0914			x	
						1	0.1069		x		
						2	0.1069		x		
						2	0.0914			x	
						2	0.1138				x
						2	0.0667	x			
						3	0.0914			x	
						3	0.0667	x			
						3	0.1069		x		

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2
				#	+					2	4
						3	0.1138				x
16	Isoamyl alcohol	123-51-3	8.6	Fusel oil, Alcoholic, Whiskey, Fruity, Banana	Whiskey, Malt, Burnt	1	4.0530	x			
						1	3.2884			x	
						1	6.0797				x
						1	6.4847		x		
						2	3.2884			x	
						2	6.0797				x
						2	6.4847		x		
						2	4.0530	x			
						3	3.2884			x	
						3	4.0530	x			
						3	6.4847		x		
						3	6.0797				x
17	3-methylpentane	96-14-0	8.7			1	0.5810	x			
18	Isocyanatomethane	624-83-9	8.7			1	0.6931	x			
						2	0.6931	x			
						3	1.0427				x
19	Ethyl methylbutyrate	7452-79-1	9.2	Sharp, Sweet, Green, Apple, Fruity	Apple	1	0.0026				x
						1	0.0018			x	
						1	0.0039	x			
						1	0.0065		x		
						2	0.0039	x			
						2	0.0018			x	
						2	0.0026				x
						2	0.0065		x		
						3	0.0018			x	

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2
				#	+					2	4
						3	0.0039	x			
						3	0.0026				x
						3	0.0065		x		
20	Ethyl 3-methylbutanoate	108-64-5	9.4	Fruity, Sweet, Apple, Pineapple, Tutti frutti	Fruit	1	0.0079				x
						1	0.0052	x			
						1	0.0087			x	
						1	0.0253		x		
						2	0.0079				x
						2	0.0087			x	
						2	0.0253		x		
						2	0.0052	x			
						3	0.0087			x	
						3	0.0052	x			
						3	0.0253		x		
						3	0.0079				x
21	Isoamyl acetate	123-92-2	10.2	Sweet, Fruity, Banana, Solvent	Banana	1	0.1623				x
						1	0.1358	x			
						1	0.1174			x	
						1	0.7636		x		
						2	0.1174			x	
						2	0.1623				x
						2	0.7636		x		
						2	0.1358	x			
						3	0.1174			x	
						3	0.1358	x			
						3	0.7636		x		



#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2
				#	+					2	4
						3	0.1623				x
22	Ethyl lactate	97-64-3	11.3	Sharp, Tart, Fruity, Buttery, Butterscotch	Fruit	1	0.1468				x
						1	0.1757			x	
						1	0.1768	x			
						1	1.0335		x		
						2	0.1757			x	
						2	0.1468				x
						2	1.0335		x		
						2	0.1768	x			
						3	0.1757			x	
						3	0.1768	x			
						3	1.0335		x		
						3	0.1468				x
23	Styrene	100-42-5	11.5	Balsamic	Balsamic, Gasoline	1	0.0065			x	
						1	0.0096		x		
						2	0.0065			x	
						2	0.0028	x			
						2	0.0063				x
						2	0.0096		x		
						3	0.0065			x	
						3	0.0096		x		
						3	0.0063				x
24	1-hexanol	111-27-3	12.0	Herbal	Resin, Flower, Green	1	0.1373				x
						1	0.0764			x	
						1	0.0173	x			
						1	0.0120		x		

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2 2	M2 4
				#	+						
						2	0.0764			x	
						2	0.1373				x
						2	0.0120		x		
						2	0.0173	x			
						3	0.0764			x	
						3	0.0173	x			
						3	0.1373				x
						3	0.0120		x		
25	Acetic acid	64-19-7	12.5	Acidic	Sour	1	0.0718				x
						1	0.0476			x	
						1	0.0962		x		
						1	0.0852	x			
						2	0.0852	x			
						2	0.0476			x	
						2	0.0962		x		
						2	0.0718				x
						3	0.0852	x			
						3	0.0476			x	
						3	0.0718				x
						3	0.0962		x		
26	1,2-dimethyl hydrazine	540-73-8	12.5			2	0.0320				x
27	Ethyl hexanoate	123-66-0	13.4	Sweet, Fruity, Pineapple, Waxy, Green, Banana	Apple peel, Fruit	1	1.5661				
						1	0.8154	x			
						1	1.1226			x	
						1	1.4003		x		

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2 2	M2 4
				#	+						
						2	1.5661				x
						2	0.8154	x			
						2	1.1226			x	
						2	1.4003		x		
						3	1.1226			x	
						3	0.8154	x			
						3	1.5661				x
						3	1.4003		x		
28	1-Heptanol	111-70-6	14.5	Musty, Leafy, Violet, Herbal, Green, Sweet, Woody, Peony	Chemical, Green	1	0.0010			x	
						1	0.0029				x
						3	0.0019				x
29	2,3,4- trimethylpentane	565-75-3	14.8			1	0.0019				x
						3	0.0021				x
30	Isoamyl butyrate	106-27-4	14.8	Fruity, green, apricot, pear, banana		1	0.0020				x
						1	0.0013			x	
						2	0.0013			x	
						2	0.0020				x
31	Undecane	1120-21-4	15.3		Alkane	1	0.0118	x			
						2	0.0118	x			
						3	0.0118	x			
32	Benzaldehyde	100-52-7	15.4	Fruity	Almond, Burnt sugar	1	0.0106	x			
						1	0.0059			x	
						2	0.0106	x			
						2	0.0059			x	
						3	0.0059			x	
						3	0.0106	x			

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2 2	M2 4	
				#	+							
33	3-Nonanone (IS)	925-78-0	15.8	Fresh, Sweet, Jasmine, Spicy, Leaf, Herbal, Fruity		1	1.0000					x
						1	1.0000	x				
						1	1.0000			x		
						1	1.0000		x			
						2	1.0000				x	
						2	1.0000	x				
						2	1.0000		x			
						2	1.0000			x		
						3	1.0000			x		
						3	1.0000	x				
34	Methyl octanoate	111-11-5	16.7	Waxy, Green, Sweet, Orange, Aldehydic, Vegetable, Herbal	Orange	1	0.0084					x
						1	0.0043		x			
						1	0.0013			x		
						1	0.0049	x				
						2	0.0084				x	
						2	0.0049	x				
						2	0.0043		x			
						3	0.0049	x				
						3	0.0084				x	
						3	0.0084				x	
35	1-Octanol	111-87-5	16.8	Waxy, Green, Orange, Aldehydic, Rose, Mushroom	Chemical, Metal, Burnt	1	0.0116	x				
						1	0.0046					x
						1	0.0035			x		
						2	0.0035			x		
						2	0.0017		x			

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2
				#	+					2	4
						2	0.0046				x
						2	0.0116	x			
						3	0.0035			x	
						3	0.0116	x			
						3	0.0046				x
						3	0.0012		x		
36	Octyl formate	112-32-3	16.8	Fruity, rose, Orange, Waxy, Cucumber		1	0.0033		x		
						1	0.0028				x
						2	0.0021			x	
						2	0.0028				x
						3	0.0021			x	
37	Linalool	78-70-6	17.1	Floral	Flower, Lavender	1	0.0024			x	
						2	0.0024			x	
						3	0.0019				x
						3	0.0024			x	
38	Phenyl acetaldehyde	122-78-1	17.6	Green, Sweet, Floral, Hyacinth, Clover, Honey, Cocoa	Hawthorne, Honey, Sweet	1	0.0042	x			
						3	0.0042	x			
39	Ethyl octanoate	106-32-1	18.3	Fruity, Wine, Waxy, Sweet, Apricot, Banana, Brandy, Pear	Fruit, Fat	1	5.6665				x
						1	3.2756	x			
						1	3.6496			x	
						1	5.7553		x		
						2	3.2756	x			
						2	5.6665				x
						2	5.7553		x		
						2	3.6496			x	

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2
				#	+					2	4
						3	3.6496			x	
						3	3.2756	x			
						3	5.6665				x
						3	5.7553		x		
40	1-Nonanol	143-08-8	19.0	Fresh, Clean, Fatty, Floral, Rose, Orange, Dusty, Wet, Oily	Fat, Green	1	0.0017				x
						2	0.0026			x	
						3	0.0022			x	
41	Pentanoic acid	109-52-4	19.7	Sickening, Putrid, Acidic, Sweaty, Rancid	Sweat	2	0.0048			x	
						2	0.0045				x
42	Propyl octanoate	624-13-5	20.3	Coconut, Cocoa, Gin		1	0.0018	x			
						1	0.0013		x		
						1	0.0045				x
						1	0.0032			x	
						2	0.0013		x		
						2	0.0045				x
						2	0.0018	x			
						2	0.0032			x	
						3	0.0032			x	
						3	0.0018	x			
43	Ethyl nonanoate	123-29-5	20.5	Fruity, Rose, Waxy, Rum, Wine, Natural, Tropical		1	0.0070	x			
						1	0.0028				x
						1	0.0024			x	
						2	0.0070	x			
						2	0.0051		x		
						2	0.0028				x

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2 2	M2 4
				#	+						
						2	0.0024			x	
						3	0.0028				x
						3	0.0070	x			
						3	0.0024			x	
44	Methyl salicylate	119-36-8	20.6	Minty	Peppermint	1	0.0093				x
						1	0.0019		x		
						1	0.0044			x	
						1	0.0057	x			
						2	0.0019		x		
						2	0.0044			x	
						2	0.0057	x			
						3	0.0044			x	
						3	0.0084				x
						3	0.0019		x		
						3	0.0057	x			
45	Methyl acetylsalicylate	580-02-9	20.6			2	0.0033		x		
						3	0.0038	x			
46	Phenylethyl alcohol	60-12-8	21.2	Floral	Honey, Spice, Rose, Lilac	1	0.8986				x
						1	0.3237			x	
						1	0.5257	x			
						1	0.5972		x		
						2	0.3237			x	
						2	0.8986				x
						2	0.5257	x			
						2	0.5972		x		
						3	0.3237			x	

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2	M2
				#	+					2	4
						3	0.8986				x
						3	0.5257	x			
						3	0.5972		x		
47	Phenethyl isobutyrate	103-48-0	21.6	Floral, Fruity, Rose, Tea Rose, Peach, Pastry		3	0.0060			x	
48	Phenethyl phenyl acetate	102-20-5	21.6	Floral, Sweet, Rose, Honey, Balsam		2	0.0010	x			
49	Ethyl decanoate	110-38-3	22.5	Sweet, Waxy, Fruity, Apple, Grape, Oily, Brandy	Grape	1	1.8744				x
						1	1.3837	x			
						1	2.2491		x		
						1	1.0851			x	
						2	1.3837	x			
						2	1.8744				x
						2	2.2491		x		
						2	1.0851			x	
						3	1.0851			x	
						3	1.3837	x			
						3	1.8744				x
						3	2.2491		x		
50	Octanoic Acid	124-07-2	23.2	Fatty, Waxy, Rancid, Oily, Vegetable, Cheesy	Sweat, Cheese	2	0.0301			x	
						2	0.0158		x		
51	$\beta$ -damascenone	23726-93-4	23.3	Apple, Rose, Honey, Tobacco, Sweet	Apple, Rose, Honey	1	0.0076	x			
						1	0.0027			x	
						1	0.0106		x		
						2	0.0076	x			



#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2 2	M2 4
				#	+						
						2	0.0106		x		
						2	0.0027			x	
						3	0.0027			x	
						3	0.0076	x			
						3	0.0106		x		
52	Isoamyl octanoate	2035-99-6	23.5	Sweet, Oily, Fruity, Green, Soapy, Pineapple, Coconut		1	0.0627				x
						1	0.0272			x	
						1	0.0448	x			
						1	0.0244		x		
						2	0.0627				x
						2	0.0244		x		
						2	0.0272			x	
						2	0.0448	x			
						3	0.0272			x	
						3	0.0627				x
						3	0.0244		x		
						3	0.0448	x			
53	Ethyl laurate	106-33-2	26.3	Sweet, Waxy, Floral, Soapy, Clean	Leaf	1	0.1655				x
						1	0.2179	x			
						1	0.2437		x		
						1	0.0792			x	
						2	0.2437		x		
						2	0.1655				x
						2	0.2179	x			
						2	0.0792			x	
						3	0.2179	x			

#	Compound	CAS	RT (min)	Aroma Descriptors		n	Ratio to IS	F22	F24	M2 2	M2 4
				#	+						
						3	0.2437		x		
						3	0.0792			x	
						3	0.1655				x
54	2,4-di-tert-butylphenol	96-76-4	27.8	Phenolic		1	3.2224			x	
						1	3.9347				x
						1	3.2731		x		
						1	0.0073	x			
						2	3.2224			x	
						2	3.2731		x		
						2	3.9347				x
						2	0.0073	x			
						3	3.2731		x		
						3	3.2224			x	
						3	3.9347				x
						3	0.0073	x			
55	Diethyl Phthalate	84-66-2	29.2	Odorless		1	0.0415				x
						1	0.0054			x	
56	Ethyl tetradecanoate	124-06-1	29.8	Sweet, Waxy, Violet, Orris	Ether	1	0.0047	x			
						2	0.0047	x			
						3	0.0047	x			
57	Ethyl hexadecanoate	628-97-7	33.8	Mild, Waxy, Fruity, Creamy, Milky, Balsam	Wax	1	0.0092				x
						2	0.0051			x	
						3	0.0111			x	
						3	0.0108	x			
58	Dibutyl phthalate	84-74-2	37.4	Bland		1	0.0188				x

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**Aroma Descriptors**

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#	Compound	CAS	RT (min)	#	+	n	Ratio to IS	F22	F24	M2 2	M2 4
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CAS = Chemical Abstracts Service number, RT = retention time in minutes, # = The Good Scents Company ([www.thegoodscentscompany.com](http://www.thegoodscentscompany.com)), accessed 10 May 2017, + = Flavornet and human odor space ([www.flavornet.org](http://www.flavornet.org)), accessed 10 May 2017, n = replicate, Ratio to IS = ratio the integrated peak area of the compound to the integrated peak area of 0.205 ppm internal standard (3-nonanone), F22 = Frontenac, 22 °Brix, F24 = Frontenac, 24 °Brix, M22 = Marquette, 22 °Brix, M24 = Marquette, 24 °Brix

**Table S2. Olfactometry results representing aroma events found in headspace of wine made from Marquette wine harvested at 22° Brix.**

Event#	Descriptor	Intensity	Start Time (min)	Width (min)	Event Area
1	Cooked Cabbage Fermented Neutral 0	48	2.8	0.86	4121
2	Ether Fermented	39	3.96	0.38	1479
3	Ether Fruity	21	4.8	0.26	545
4	Apple Fruity Pleasant +2	52	6.6	0.32	1661
5	Apple Fruity Ether Fermented Sickly sweet Chocolate Chocolate	58	7.89	1.09	6311
6	Apple Fruity Apple	53	9.02	1.22	6455
7	Green Olive Black Olive Molasses	50	11.53	0.29	1447
8	Wine Apple Fruity Fruity	49	13.33	0.35	1712
9	Cooked Cabbage Over ripe	33	14.03	0.31	1021
10	Chocolate Molasses	40	16.49	0.14	558
11	Chocolate	32	17.84	0.17	543
12	Black Olive	32	18.24	0.45	1437
13	Green Olive	34	24.07	0.19	644
14	Green Olive	34	24.55	0.26	882
15	Green Olive Black Olive	37	25.25	0.21	775

Event# corresponds to black signal peaks in Figure S1. Intensity is rated on a scale of 1–100; 100 is most intense. Event area = Intensity × width × 100

**Table S3. Olfactometry results representing aroma events found in headspace of wine made from Marquette wine harvested at 24° Brix.**

Event#	Descriptor	Intensity	Start Time (min)	Width (min)	Event Area
1	Over ripe	51	2.84	0.47	2393
2	Ethanol	51	4	1.51	5804
	Fruity				
	Apple				
	Pleasant +1				
3	Strawberry	51	6.33	0.57	1374
	Fruity				
4	Chocolate	70	8.33	1.67	9644
	Molasses				
	Chocolate				
	Molasses				
	Strawberry				
5	Strawberry	41	13	0.98	2783
	Strawberry Jam				
6	Cheesy	30	22	1.43	1078
	Body Odor				

Event# corresponds to black signal peaks in Figure S2. Intensity is rated on a scale of 1 – 100; 100 is most intense. Event area = Intensity × width × 100

**Table S4. Olfactometry results representing aroma events found in headspace of wine made from Frontenac wine harvested at 22° Brix.**

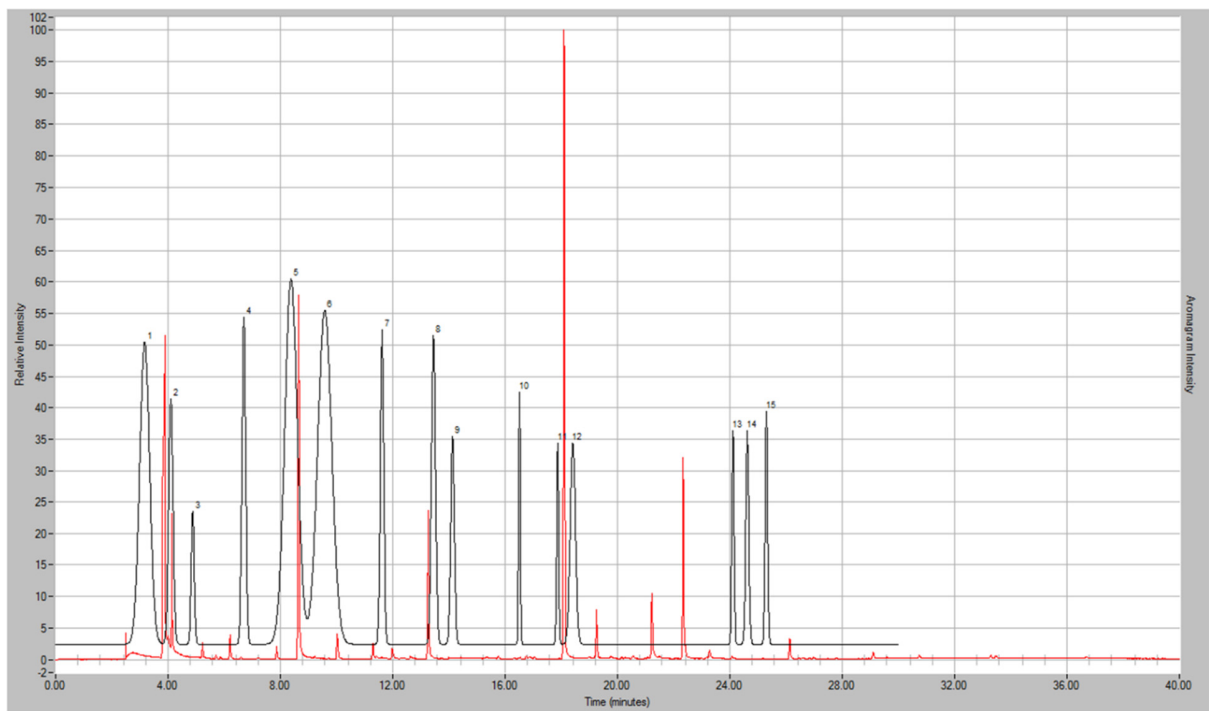
Event#	Descriptor	Intensity	Start Time (min)	Width (min)	Event Area
1	Ethanol	54	3.34	3.13	13854
	Fruity				
2	Strawberry	70	6.12	0.64	1118
	Fruity				
	Strawberry Jam				
3	Cheesy	60	7.93	0.1	598
	Chocolate				
4	Chocolate	71	8.49	1	5954
	Chocolate				
	Molasses				
	Fruity				
	Apple				
	Strawberry				
5	Licorice	50	13.33	0.13	648
	Black Currant				
6	Chocolate Chees	50	18	0.23	1150
7	Wine	41	22.19	1.8	573

Event# corresponds to black signal peaks in Figure S3. Intensity is rated on a scale of 1–100; 100 is most intense. Event area = Intensity × width × 100

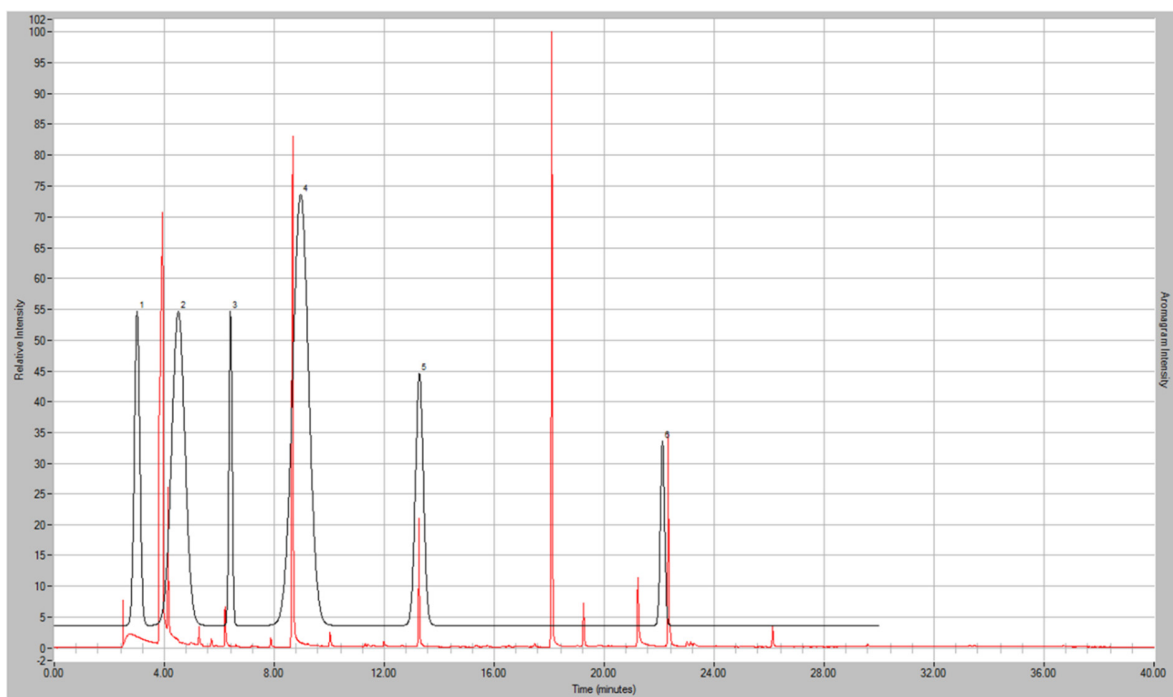
**Table S5. Olfactometry results representing aroma events found in headspace of wine made from Frontenac wine harvested at 24° Brix.**

Event#	Descriptor	Intensity	Start Time (min)	Width (min)	Event Area
1	Ethanol Fruity	54	3.99	0.39	2102
2	Strawberry Black Currant Strawberry Jam	61	6.34	0.4	487
3	Rubber	30	7.95	0.32	119
4	Chocolate Cheesy Chocolate Molasses	70	8.59	0.63	3564
5	Licorice Strawberry	52	13.04	1	3737
6	Chocolate Molasses	60	18.04	0.65	3000
7	Wine	32	22.3	0.85	191

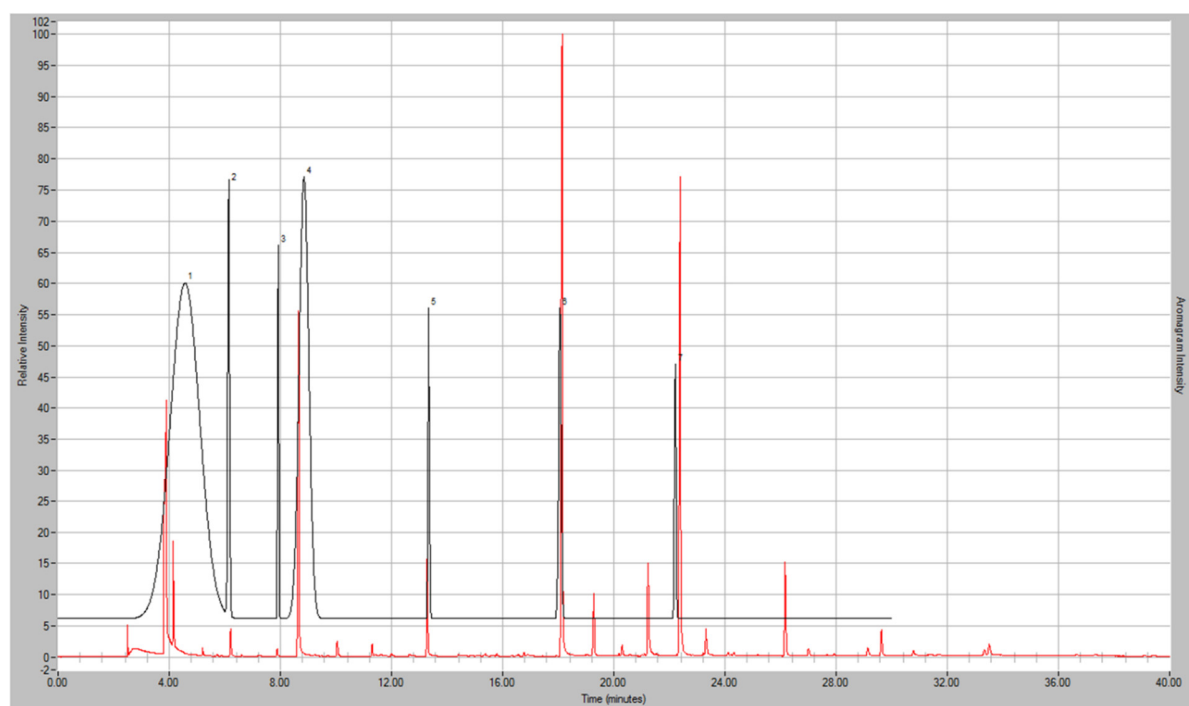
Event# corresponds to black signal peaks in Figure S4. Intensity is rated on a scale of 1–100; 100 is most intense. Event area = Intensity × width × 100



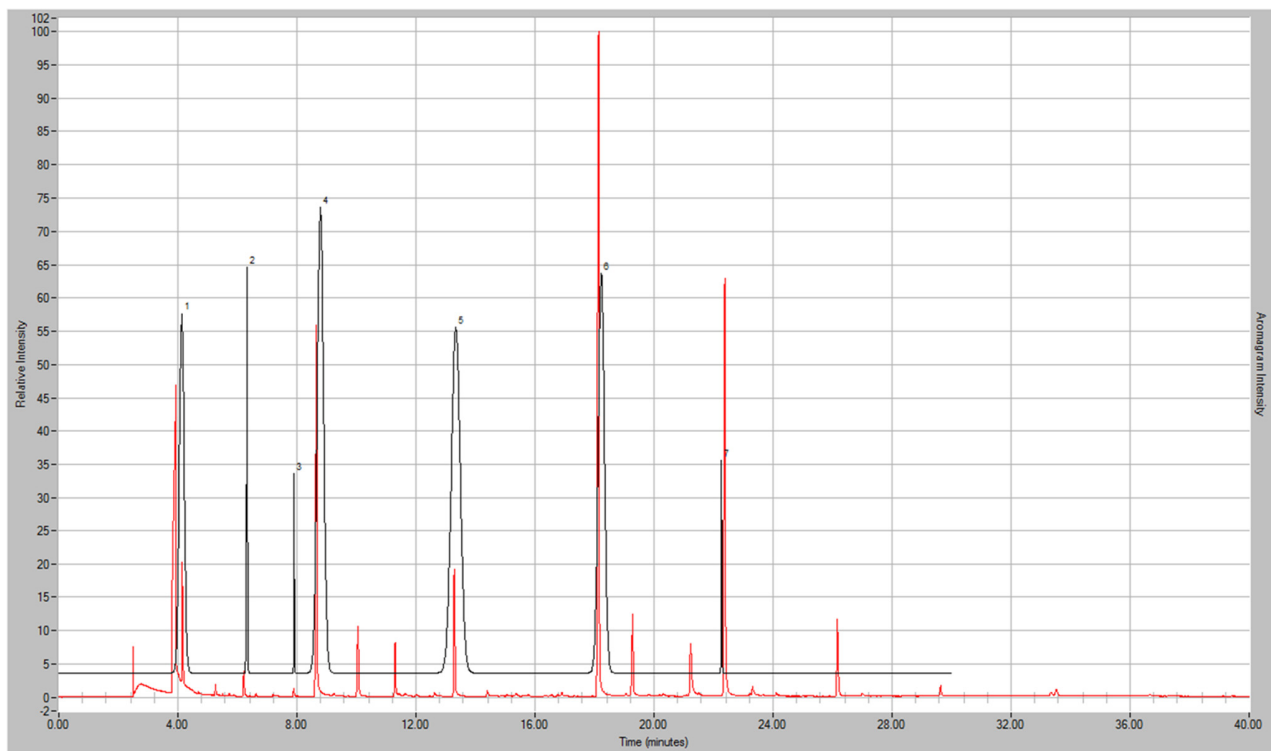
**Figure S1.** Overlay of total ion chromatogram (red signal) and aromagram (black signal) representing simultaneous chemical and sensory analysis of wine made from Marquette wine harvested at 22° Brix.



**Figure S2.** Overlay of total ion chromatogram (red signal) and aromagram (black signal) representing simultaneous chemical and sensory analysis of wine made from Marquette wine harvested at 24° Brix.



**Figure S3.** Overlay of total ion chromatogram (red signal) and aromagram (black signal) representing simultaneous chemical and sensory analysis of wine made from Frontenac wine harvested at 22° Brix.



**Figure S4.** Overlay of total ion chromatogram (red signal) and aromagram (black signal) representing simultaneous chemical and sensory analysis of wine made from Frontenac wine harvested at 24° Brix.