

Supplementary Material

Aroma and Sensory Profiles of Sauvignon Blanc Wines from Commercially Produced Free Run and Pressed Juices

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Table S1. Compounds identified during the GC-MS analysis of the experimental wines along with their respective retention times, ions used for qualification and quantification as well as the R² of their calibration equation.

Aroma Compound	Retention Time (min)	Ions (<i>m/z</i>)*	R ²
<i>Alcohols/Aldehydes</i>			
Isobutanol	9.7	41 , 43, 74	0.9994
Butan-1-ol	11.7	56 , 31, 41	0.9997
Isoamyl alcohol	14.9	70 , 55, 42	0.9999
Methionol	43.4	106 , 61, 58	0.9991
Benzyl alcohol	49.8	108 , 79, 107	0.9994
Phenylethyl alcohol	51.9	91 , 92, 122	0.9996
Benzaldehyde	31.7	106 , 77, 105	0.9988
<i>C₆-Alcohols</i>			
Hexanol	23.3	56 , 43, 69	0.9995
<i>trans</i> -3-Hexen-1-ol	23.4	82 , 41, 67	0.9996
<i>cis</i> -3-Hexen-1-ol	24.4	67 , 41, 82	0.9996
<i>Cinnamates</i>			
Ethyl cinnamate	64.6	131 , 103, 176	0.9951
Ethyl dihydrocinnamate	54.6	104 , 91, 107	0.9991
<i>Esters</i>			
Ethyl isobutyrate	9.5	71 , 43, 116, 88	0.9995
Ethyl butanoate	11.7	88 , 75, 101	0.9997
Ethyl isovalerate	14.4	88 , 85, 115	0.9995
Ethyl hexanoate	24.8	88 , 99, 101	0.9994
Ethyl octanoate	39.5	88 , 101, 127	0.9994
Ethyl decanoate	52.4	88 , 101, 155	0.9988
Ethyl dodecanoate	63.9	88 , 101, 183	0.9955
Isobutyl acetate	10.5	56 , 43, 73	0.9996
Isoamyl acetate	16.4	87 , 70, 55	0.9992
Hexyl acetate	26.2	61 , 56, 84	0.9997
<i>cis</i> -3-Hexenyl acetate	26.6	67 , 43, 82	0.9997
β -Phenylethyl acetate	50.1	43 , 104, 91	0.9995
Methyl octanoate	34.1	74 , 87, 127	0.9992
Ethyl-(L)-lactate	21.8	45 , 43, 75	0.9995
Diethyl succinate	43.6	101 , 129, 73	0.9993
<i>Fatty Acids</i>			
Isobutyric acid	33.9	43 , 73, 88	0.9987
Hexanoic acid	49.0	60 , 73, 87	0.9965
Octanoic acid	60.1	60 , 73, 101	0.9991
Decanoic acid	70.1	60 , 73, 129	0.9983
<i>Methoxypyrazines</i>			
IBMP	20.0	124 , 151, 166	0.9997
<i>Norisoprenoids</i>			
β -Damascenone	54.2	121 , 69, 190	0.9988
β -Ionone	60.4	177 , 178, 192	0.9988
<i>Terpenes</i>			
<i>cis/trans</i> -Rose oxide	32.8	139 , 69, 83	0.9998
Linalool	37.0	93 , 71, 121	0.9995
α -Terpineol	44.7	59 , 93, 121	0.9994
β -Citronellol	48.1	69 , 41, 82, 123	0.9994
Nerol	49.3	69 , 41, 93, 121	0.9996
<i>Thiols</i>			
3MH	42.7	134 , 100	0.9980
3MHA	38.5	116 , 101	0.9990
<i>Vinyl Phenols</i>			
4-Vinylphenol	73.2	120 , 91	0.9988
4-Vinylguaiaicol	65.3	150 , 135, 107	0.9988

*Ions used for quantification are in bold.

Table S2. Sensory attributes and their reference standards used in the sensory evaluation.

Attribute	Reference Standard
Passionfruit/Sweaty	100 μ L 3MHA stock (1.5 μ L 3MHA/100 mL ultrapure water) in 1 L diluted base wine
Passionfruit Skin	400 μ L 3MH stock (6 μ L 3MH/100 mL ultrapure water) in 1 L diluted base wine
Banana Lolly	48 μ L isoamyl acetate + 10 μ L hexyl acetate in 2 L CuSO ₄ treated diluted base wine
Canned Stone Fruit	200 g Watties canned Golden Peaches + 40 g Watties canned Apricot cut into 1 cm pieces, soaked in 0.5 L diluted base wine for 30 minutes
Lemon/Lime	15 g chopped whole lemon + 7.5 g chopped whole lime soaked in 0.5 L of diluted base wine for 30 minutes
Tropical	250 mL Golden Circle Mango-Pineapple juice in 250 mL of diluted base wine
Floral	45 μ L phenylethyl acetate in 2 L CuSO ₄ treated diluted base wine
Fresh Green Capsicum	20 mL IBMP stock (6 μ L IBMP/100 mL ultrapure water) + 100 μ L <i>cis</i> -3-hexen-1-ol in 2 L CuSO ₄ treated diluted base wine
Canned Asparagus	50 mL Watties canned Asparagus juice in 2 L diluted base wine
Boxwood	500 mL 4MMP stock (1.5 μ L 4MMP/100 mL ultrapure water) in 2 L diluted base wine
Grassy	40 g fresh cut grass in 2 L diluted base wine and soaked for 30 minutes
French Vanilla/Bourbon	600 mL hexan-1-ol stock (20 μ L hexanol/600 mL ultrapure water) in 600 mL undiluted base wine
Undiluted base wine: 50/50 mix of Corbans White Label Sauvignon blanc (12.5 % Alc./Vol.) and Country Dry White cask wine (11.5 % Alc./Vol.). Diluted base wine: 50/50 mix of undiluted base wine and water. CuSO ₄ treated diluted base wine: diluted based wine with CuSO ₄ added at a rate of 50 mg/L	

Table S3. Averages \pm standard deviations of certain polyphenols found in the experimental juices.

	Wairau Valley (A)			Awatere Valley (B)		
	FR	LP	HP	FR	LP	HP
Catechin (mg/L)	21.6 \pm 4.4	17.4 \pm 0.4	15.5 \pm 3.1	40.4 \pm 0.9	26.5 \pm 1.5	27.3 \pm 1.8
<i>trans</i> -Caftaric acid (mg/L)	51.7 \pm 0.9	9.5 \pm 0.1	4.1 \pm 0.8	8.5 \pm 2.9	0.3 \pm 0.0	0.3 \pm 0.0
Grape reaction product (CAE)*	25.0 \pm 0.2	10.9 \pm 0.8	6.1 \pm 0.1	61.8 \pm 0.3	15.2 \pm 0.5	8.9 \pm 0.3
Quercetin-3-glucoside (mg/L)	5.6 \pm 0.3	12.1 \pm 2.0	25.9 \pm 0.7	5.2 \pm 0.1	14.4 \pm 0.4	23.8 \pm 1.8
FR = Free Run, LP = Light Press and HP = Heavy Press. *CAE = caffeic acid equivalents.						

Table S4. Averages and standard deviations (\pm) of the fermentation triplicates for some basic wine parameters after fermentation.

	Wairau Valley (A)			Awatere Valley (B)		
	FR	LP	HP	FR	LP	HP
pH	2.9 \pm 0.0 ^a	3.9 \pm 0.0 ^b	4.5 \pm 0.0 ^c	3.2 \pm 0.0 ^a	4.0 \pm 0.0 ^b	4.4 \pm 0.0 ^c
Ethanol (%)	12.9 \pm 0.2 ^a	13.1 \pm 0.0 ^b	12.4 \pm 0.0 ^c	13.9 \pm 0.0 ^a	13.6 \pm 0.0 ^b	13.0 \pm 0.1 ^c
Residual Sugar (g/L)	6.2 \pm 2.7 ^a	2.1 \pm 0.1 ^b	1.2 \pm 0.1 ^b	2.2 \pm 0.2 ^a	2.7 \pm 0.3 ^b	2.1 \pm 0.0 ^c
Total Acidity (g/L)	9.3 \pm 0.2 ^a	6.6 \pm 0.0 ^b	7.6 \pm 0.0 ^c	8.9 \pm 0.0 ^a	7.2 \pm 0.0 ^b	7.8 \pm 0.1 ^c
Volatile Acidity (g/L)	0.5 \pm 0.0 ^a	0.4 \pm 0.0 ^b	0.4 \pm 0.0 ^b	0.4 \pm 0.0 ^a	0.4 \pm 0.0 ^a	0.5 \pm 0.0 ^b
Free SO ₂ (mg/L)	1.6 \pm 0.8 ^a	7.8 \pm 0.2 ^b	6.7 \pm 0.2 ^b	10.1 \pm 0.2 ^a	7.5 \pm 5.2 ^a	5.9 \pm 0.4 ^a
Total SO ₂ (mg/L)	48.5 \pm 3.2 ^a	60.7 \pm 6.0 ^a	63.5 \pm 14.9 ^a	83.6 \pm 3.5 ^a	68.5 \pm 19.3 ^a	73.4 \pm 7.0 ^a

FR = Free Run, LP = Light Press and HP = Heavy Press. Letters (a,b,c) represent homogeneous subsets as determined by Tukey's HSD.

Table S5. Simplified PERMANOVA.

	df	F.Model	R ²	p-value
Fraction	2	140.881	0.681	0.001
Vineyard	1	64.819	0.157	0.001
Fraction:Vineyard	2	27.529	0.133	0.001
Residuals	12	-	0.029	-
Total	17	-	1.000	-