

Viticulture Gross Margin Benchmarking Report 2016

Gisborne | Hawke's Bay | Wairarapa | Marlborough



NEW ZEALAND WINE
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Ministry for Primary Industries
Manatū Ahu Matua





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In collaboration with

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Gisborne

Key parameters and financial results for Gisborne vineyard gross margins

Year ended 30 June 2016	Chardonnay
Total production ¹ (t/ha)	12.7
Average return (\$/t)	1 290
Grape income (\$/ha)	16 375
Vineyard direct expenses (\$/ha)	6 355
Gross Margin (\$/ha)	10 020
Gross Margin (\$/t)	790

¹ Grapes are harvested in the autumn, so the 2015/16 year refers to fruit harvested in autumn 2016.

Figures may not add to totals due to rounding.

Background

The MPI viticulture monitoring programme was reviewed in 2013 and the decision to develop gross margins of dominant grape varieties in Hawke's Bay was trialled for the 2015 season. The success of the trial has led to the continuation of the gross margin format and has also seen the expansion of the programme in Marlborough, Gisborne and Wairarapa using a data entry portal within New Zealand Winegrowers website.

The gross margin calculates the revenue minus direct expenses for growing, harvesting and marketing the crop. It does not take account of overheads such as administration, debt-servicing, tax, drawings or development and capital spending.

This is the first year of gross margin benchmarking in Gisborne and seven growers provided data for a total of 12 Chardonnay blocks.

Gisborne weather data

Month	Growing Degree Days ¹			Rainfall (mm)		
	2015 ²	2016	Long Term Average	2015	2016	Long Term Average
July	22	18	25	71	82	135
August	30	32	34	162	120	88
September	67	42	69	167	183	70
October	118	147	126	42	41	69
November	169	168	167	17	94	65
December	235	207	250	91	26	61
January	298	320	288	84	107	69
February	234	317	261	24	50	65
March	241	260	233	89	65	93
April	158	155	153	40	113	101
May	76	163	90	53	36	92
June	50	56	36	46	86	98
Total	1 698	1 885	1 732	886	1 003	1 006

¹ GDD – growing degree days. GDDs are a temperature index, calculated by taking the average of the daily high and low temperatures compared with a baseline (10°C). They help predict the date that a flower will bloom or a crop reach maturity.

² Year refers to year of harvest.

Source MetService (Gisborne Aws).



Key points

Gisborne Chardonnay achieved a gross margin of **\$10 020 per hectare** which was **\$2030 higher than Hawke's Bay** Chardonnay gross margin. This was achieved despite lower prices than in Hawke's Bay through higher yields and significantly lower labour costs.

Average yields for Gisborne Chardonnay were **down by 7 percent** compared to 2015¹.

Seasonal conditions were broadly described as a cool late start, followed by a dry cool flowering, a warm ripening period and some rainfall around harvest which was slightly later than usual.

Average price reported by this grower group was **\$1290 per tonne, 7 percent higher than 2015** industry average prices².

Early predictions were for only average Chardonnay yields in 2016 due to cooler than average conditions for flower initiation in December 2014.

Growing degree days from July-September 2015 were lower than the long term average and the growing season started later than usual.

A dry, albeit cooler than average, late November and December ensured flowering occurred in a good weather window which generally assisted fruit set.

Temperatures were higher than average during the critical ripening months of January to March which allowed some early blocks to harvest before the rainfall in late March and April, albeit slightly later than usual.

Other growers needed to harvest around the March and April rainfall events and generally fruit was harvested with **good phenological ripeness** as acids dropped.

¹ New Zealand Winegrowers Vintage Survey 2016 and Vineyard Register Report 2015-2018.

² New Zealand Winegrowers Average Grape Prices 2015.

Gisborne gross margin

Chardonnay gross margin - Key points

The Gisborne Chardonnay gross margin was \$10 020 per producing hectare, or \$790 per tonne. This is 25 percent higher than the Hawke's Bay Chardonnay gross margin of \$7990 per producing hectare.

Seasonal conditions were generally favourable in 2016, although the season ran slightly late. Gisborne produced 6 percent less Chardonnay in 2016 than in 2015³.

Average yields of 12.7 tonnes per hectare are higher than Hawke's Bay and reflect a number of Gisborne growers targeting higher production to match demand for mid-range wines.

There was a range of yields, 7 to 19 tonnes per hectare, and prices ranging from \$1000 to \$2000 per tonne which reflects the range of markets Gisborne growers are producing for.

The average price received for the survey blocks was \$1290 per tonne. This was \$625 per tonne lower than the Hawke's Bay survey blocks and reflects the value market targeted by Gisborne growers.

Gisborne Chardonnay labour expenses per hectare were significantly lower than in Hawke's Bay. While partly due to fewer vines per hectare in Gisborne, growers generally had lower inputs to match the target market of the fruit.

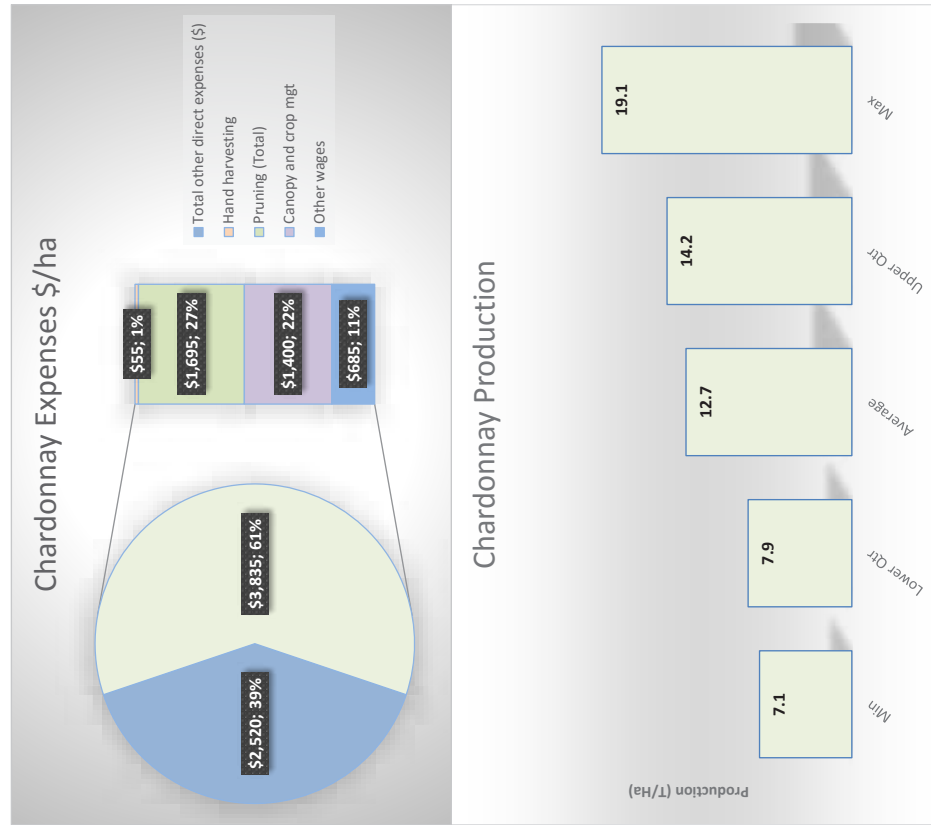
Pruning style was predominately 3 or 4 cane Vertical Shoot Positioned (VSP) with a few Sylvos blocks. Pruning costs were \$1695 per hectare or \$0.98 per vine.

There is minimal irrigation cost with long term average rainfall 30 percent higher than in Hawke's Bay. Weed and Pest chemical costs were \$465 per hectare higher than for Hawke's Bay. However, caution is required as fuel, repairs and maintenance costs could not be separated where contractors provided the spraying. Overall, other direct expenses were \$550 per hectare lower than Hawke's Bay.

³ New Zealand Winegrowers Vintage Survey 2016.

Vineyard Gross Margin Benchmarking									
Region		Gisborne		Hawkes Bay		Hawkes Bay			
Year		2016							
Variety		Chardonnay							
Adjusted for unpaid labour		Average		Quartile by Gross Margin ¹		Lower		Upper	
		per Ha	per vine	per row	per row	per row	per row	per row	per row
			per vine	metre	metre	metre	metre	metre	metre
Unpaid FTE - number		0.2							0.2
Unpaid FTE - hours/ha		15							39
Vines/ha		1 724			1 859	1 596			2 438
Row metres/ha		3 639							4 230
Yield (Tonnes)		12.7	7.4kg	3.5kg	14.2	7.9			8.7
Income \$/tonne		1 290			1 515	1 285			1 915
Income (\$)		16 375	9.50	4.50	21 040	10 045			16 740
Labour expenses (\$)									
Hand harvesting		55	0.03	0.02	0	221			205
Pruning (Total)		1 695	0.98	0.47	1 433	1 426			2 225
Canopy and crop mgt		1 400	0.81	0.38	1 474	1 262			2 135
Other wages		685	0.40	0.19	862	782			1 115
Total labour expenses		3 835	2.22	1.05	3 770	3 690			5 680
Other direct expenses (\$)									
Weed and pest control		1 268	0.74	0.35	1 168	1 269			803
Fertiliser and lime		139	0.08	0.04	92	106			125
Electricity		13	0.01	0.00	0	34			189
Vehicle		73	0.04	0.02	14	18			203
Fuel		105	0.06	0.03	111	24			341
Repairs & maintenance		193	0.11	0.05	291	131			609
General		1	0.00	0.00	1	2			2
Machine harvesting		727	0.42	0.20	384	749			799
Total other direct expenses (\$)		2 520	1.46	0.69	2 060	2 330			3 070
Total direct expenses (\$)		6 355	3.69	1.75	5 830	6 020			8 750
Gross Margin (\$/ha)		10 020	5.81	2.75	13 365	4 765			7 990
Gross Margin (\$/T)		790			870	540			915
Number in model		12			12	12			12

¹ Quartile analysis shows the average figures where the gross margin is at the lower or upper quartile, i.e. an indication of the features of higher and lower performance.



Industry issues and developments

This survey indicates Gisborne Chardonnay is currently producing a gross margin higher than Hawke's Bay. This reflects Gisborne growers producing higher yields at a lower price point. Growers suggest the region now comprises a range of producers targeting both the Super Premium and Value markets.

There is some replanting in Gisborne which reflects the desire to remove blocks with virus and/or wood disease eg. Eutypa. It is also due to growers replacing Merlot and Gewurztraminer with Sauvignon Blanc and Chardonnay to meet market demand. Overall, New Zealand Winegrowers report minimal change in vineyard producing area to 2018⁴.

Following a few years of difficult relationships between growers and wineries, they are now embracing the future as more of a partnership. There are 34 growers supplying a large grower cooperative which has helped shorten the route to market. While growers may not be

supplying all their crop to the cooperative, they represent 65 percent of contract growers in the region. The co-operative has been beneficial in aligning crops to market demand and enhancing returns to growers.

Other key issues identified by growers in Gisborne included

- Risk of future biosecurity breaches by overseas pests and diseases.
- How the industry will approach continuous improvement in sustainable practices.
- Succession, and retaining key staff and encouraging new entrants into the industry.
- Health and safety is currently very topical. Growers would appreciate industry assistance and are committed to ensuring they have a safe workplace.

⁴ New Zealand Winegrowers Vineyard Register Report 2015-2018.

Hawke's Bay

Key parameters and financial results for Hawke's Bay vineyard gross margins

Year ended 30 June 2016	Sauvignon Blanc	Chardonnay	Merlot
Total production ¹ (t/ha)	14.2	8.7	9.4
Average return (\$/t)	1 460	1 915	1 945
Net cash income (\$/ha)	20 770	16 740	19 780
Vineyard working expenses (\$/ha)	7 315	8 750	8 240
Gross Margin (\$/ha)	13 455	7 990	10 090
Gross Margin (\$/t)	945	915	1 070

¹ Grapes are harvested in the autumn, so the 2015/16 year refers to fruit harvested in autumn 2016. Figures may not add to totals due to rounding.

Background

The MPI viticulture monitoring programme was reviewed in 2013 and the decision to develop gross margins of dominant grape varieties in Hawke's Bay was trialled for the 2015 season. The success of the trial has led to the continuation of the gross margin format and has also seen the expansion of the programme in Marlborough, Gisborne and Wairarapa using a data entry portal within New Zealand Winegrowers website.

The gross margin calculates the revenue minus direct expenses for growing, harvesting and marketing the crop. It does not take account overheads such as administration, debt servicing, tax, drawings or development and capital spending.

This is the second year of gross margin benchmarking in Hawke's Bay and 18 growers provided data for a total of 35 blocks.

Hawke's Bay weather data

Month	Growing Degree Days ¹			Rainfall (mm)		
	2015 ²	2016	Long Term Average	2015	2016	Long Term Average
July	11	12	12	55	37	113
August	11	27	21	39	33	56
September	30	20	51	60	162	46
October	58	100	92	35	14	53
November	102	119	126	28	59	36
December	157	177	199	59	20	53
January	206	272	238	0	73	47
February	196	283	224	14	7	39
March	220	224	187	47	68	47
April	131	133	120	57	11	74
May	52	124	58	40	16	64
June	26	37	17	28	59	76
Total	1 200	1 528	1 345	462	559	704

¹ GDD – growing degree days. GDDs are a temperature index, calculated by taking the average of the daily high and low temperatures compared with a baseline (10°C). They help predict the date that a flower will bloom or a crop reach maturity.

² Year refers to year of harvest.

Source NIWA (Whakatū).



Key points

Sauvignon Blanc had the best gross margin of the three varieties achieving a **gross margin of \$13 455 per hectare**. This was followed by Merlot, which had the highest gross margin previously in 2015, with a gross margin of \$10 090 per hectare and Chardonnay which achieved \$7990 per hectare.

Yields were up for both Sauvignon Blanc and Chardonnay in 2016, with Merlot yields similar to last year. The yield increases in Sauvignon Blanc and Chardonnay **can be attributed to a good flowering period**, a consequence of lighter yields in 2015 and the absence of adverse climatic events.

Weather conditions for the season were mostly favourable. Conditions were dry through the winter which was relieved by **162mm of rain in September**. This was **116mm above average**. Another heavy rainfall in January, before veraison¹, was welcomed by growers.

This was **followed by a hot and dry February** with growing degree days (GDD) well above average which, provided perfect conditions for fruit ripening. Heavy dews, warm night temperatures and late rain in March and early April impacted some blocks that were too ripe to hang on through the rain. For a few growers, this rain resulted in some crop loss before harvest could commence.

Prices per tonne were broadly similar to last year. Those growers involved with this survey in both 2015 and 2016 reported Sauvignon Blanc prices easing by 3 percent. Chardonnay remained the same and Merlot increased by just 1 percent from the previous season.

Contract growers voiced concern regarding prices for Merlot and growers agreed the demand for this variety has eased.

There was a varietal difference for labour and direct expenses. **Chardonnay had the highest labour expenses** of the three varieties as growers matched inputs to this higher priced varietal. **Sauvignon Blanc had the lowest labour and working expenses** because of reduced crop management inputs and the earlier harvest timing compared to Chardonnay and Merlot.

¹ Start of ripening.

Hawke's Bay gross margins

Sauvignon Blanc gross margin - Key points

The Hawke's Bay Sauvignon Blanc gross margin was \$13 455 per producing hectare, equal to \$945 per tonne. This is \$6550 per hectare lower than the Marlborough Sauvignon Blanc gross margin.

Of the three Hawke's Bay varieties, the gross margin for Sauvignon Blanc produced the best results being 33 percent higher than Merlot and 69 percent above Chardonnay.

2016 yields averaged 14.2 tonnes per hectare which is 53 percent higher than the previous season. However, the 2015 yield was reduced by poor flowering conditions and a carbohydrate deficit, which did not occur in 2016.

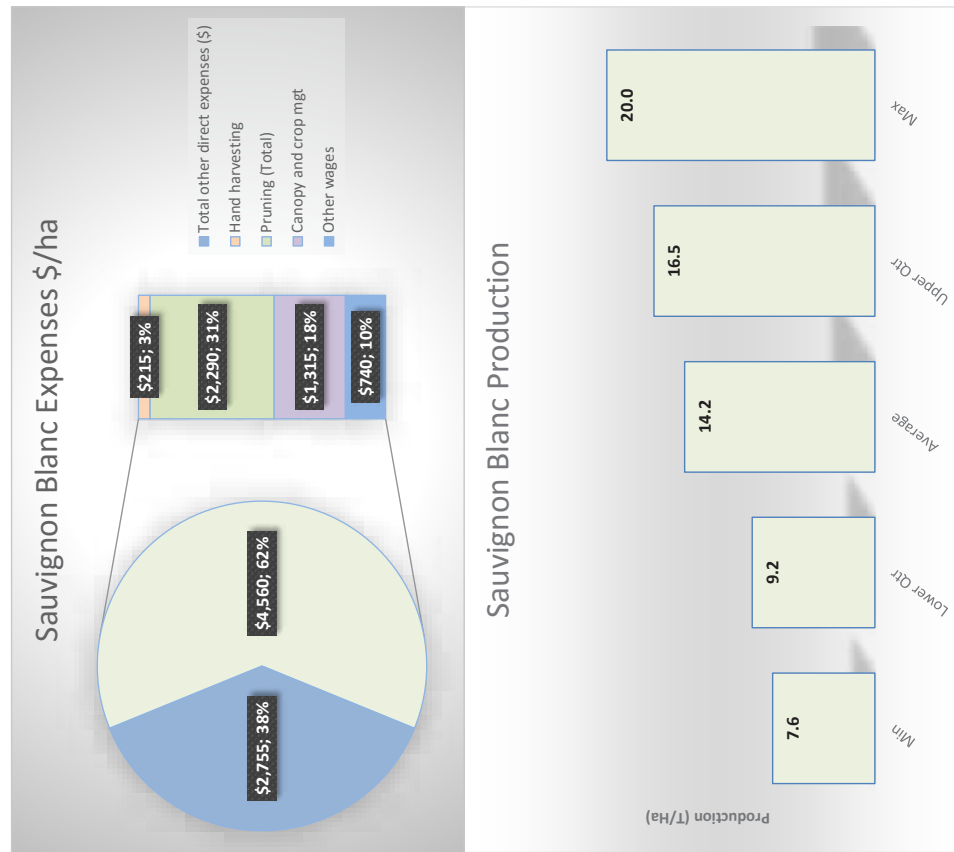
The average price for Sauvignon Blanc was \$1460 per tonne, which has been relatively steady over the past four years. The price paid per tonne this year was 3 percent lower than 2015 and not affected by the near record Marlborough yields.

Sauvignon Blanc had the lowest labour and other working expenses when compared with Chardonnay and Merlot. Growers suggested that the lower return for Sauvignon Blanc acts as a disincentive to the level of inputs put into growing the crop. Sauvignon Blanc's upright growth habit and more flexible fruit quality specification also reduce the need for shoot or crop thinning and general vine management. The variety was also harvested earlier than Merlot and Chardonnay so wasn't exposed to the late March rain, reducing the need for extra fungicide applications.

Sauvignon Blanc had higher pruning costs than Chardonnay or Merlot. Blocks in the survey averaged 3.3 canes per hectare suggesting that most vines were three or four canes. This therefore increased the individual vine cost for pruning as the laying of three or four canes takes extra time.

Vineyard Gross Margin Benchmarking										
Region	Hawkes Bay									
Year	2016									
Variety	Sauvignon Blanc									
Adjusted for unpaid labour	Average		\$ per producing Ha				per Ha	per Ha	per Ha	per Ha
	per vine	per row metre	Quartile by Gross Margin ¹		Upper	Lower				
Unpaid FTE - number	0.2									0.3
Unpaid FTE - hours/ha	20									30
Vines/ha	2 116				2 114		2 082			
Row metres/ha	4 146									
Yield (Tonnes)	14.2	6.7kg	3.4kg	16.5	9.2					3 846
Income \$/tonne	1 460			1 565	1 665					1 500
Income (\$)	20 770	9.81	5.01	25 895	14 525					13 965
Labour expenses (\$)										
Hand harvesting	215	0.10	0.05	0	256					0
Pruning (Total)	2 290	1.08	0.55	1 867	2 420					2 061
Canopy and crop mgt	1 315	0.62	0.32	1 379	1 087					1 231
Other wages	740	0.35	0.18	208	2 994					1 083
	4 560	2.15	1.10	3 455	6 755					4 375
Total labour expenses										
Other direct expenses (\$)										
Weed and pest control	637	0.30	0.15	624	949					812
Fertiliser and lime	125	0.06	0.03	44	151					155
Electricity	149	0.07	0.04	155	197					170
Vehicle	175	0.08	0.04	179	77					144
Fuel	528	0.25	0.13	1 006	451					228
Repairs & maintenance	429	0.20	0.10	423	1 004					403
General	5	0.00	0.00	0	31					116
Machine harvesting	707	0.33	0.17	530	351					908
Total other direct expenses (\$)	2 755	1.30	0.66	2 960	3 210					2 935
Total direct expenses (\$)	7 315	3.46	1.76	6 415	9 965					7 310
Gross Margin (\$/ha)	13 455	6.36	3.25	16 015	6 345					6 655
Gross Margin (\$/T)	945			985	580					715
Number in model	12			12	12					15

¹ Quartile analysis shows the average figures where the gross margin is at the lower or upper quartile, i.e. an indication of the features of higher and lower performance.



Chardonnay gross margin

The Hawke's Bay 2016 gross margin was \$7990 per producing hectare, equivalent to \$915 per tonne and \$2030 per hectare lower than the Gisborne Chardonnay gross margin.

Of the three varieties, Chardonnay had the lowest gross margin. This is because its lower yields were not compensated for by commensurately higher prices. Chardonnay is typically cropped at lower levels than the other varieties to meet required quality parameters.

The increased Chardonnay 2016 gross margin appears to be driven primarily by improved yield. Chardonnay's yield of 8.7 tonnes per hectare was up on last season (6.6 t/ha) and higher than the five-year average (6.6 t/ha). The quality of the grapes was reported to be high.

The average price paid for Chardonnay in 2016 was \$1915 per tonne which is the same as in 2015 and is appearing to hold steady since its price increase in 2014. Demand for high quality Hawke's Bay Chardonnay is reported by growers and wineries to be strong and reputation appears to be building. However, there was no clear reflection of higher price per tonne within the survey group.

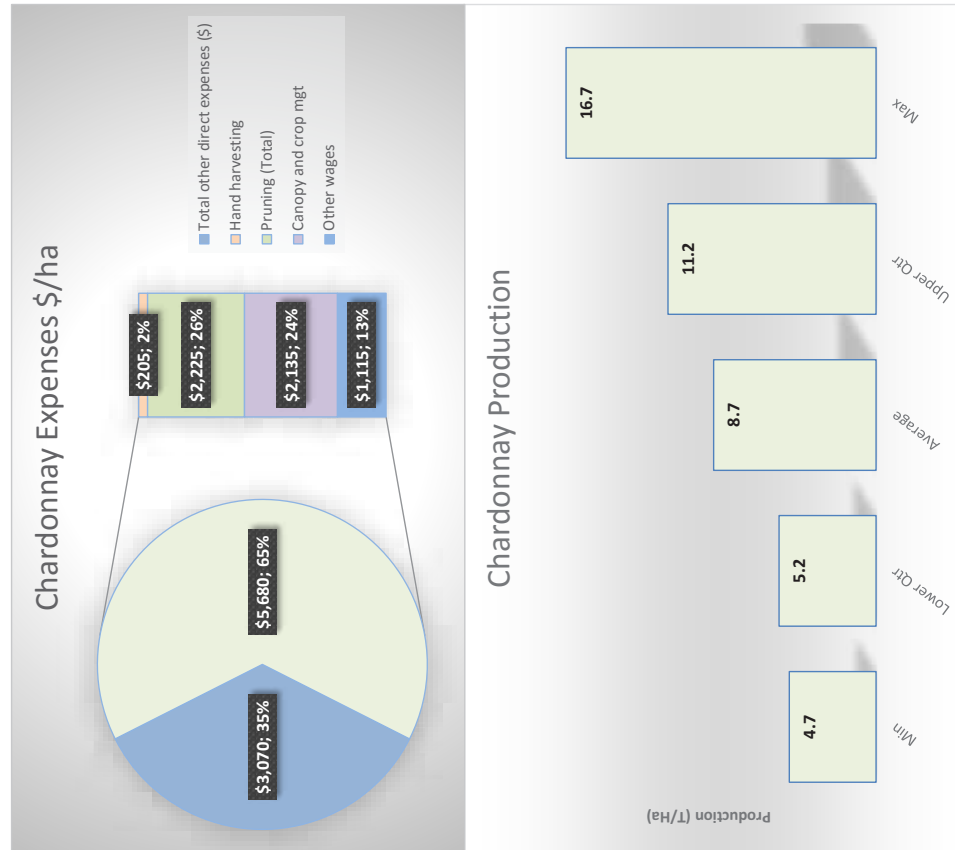
Chardonnay has the highest labour costs of all three varieties. This was reported to be due to a higher amount of work being done to produce the required high quality crop, for example, thinning to regulate crops to levels set by wineries. Mechanical leaf removal is beginning to be preferred over the use of sheep, as growers prefer more leaf cover to protect from sunburn and seek a higher level of precision.

Vineyard Gross Margin Benchmarking

Region Hawkes Bay
 Year 2016
 Variety Chardonnay

Adjusted for unpaid labour	Average		\$ per producing Ha			
	per Ha	per vine	per row	Quartile by Gross Margin ¹		
	per metre	per vine	per metre	Upper	Lower	per Ha
Unpaid FTE - number	0.2					0.3
Unpaid FTE - hours/ha	39					38
Vines/ha	2 438			2 433	2 637	
Row metres/ha	4 230					3 927
Yield (Tonnes)	8.7	3.6kg	2.1kg	11.2	5.2	6.6
Income \$/tonne	1 915			2 610	2 050	1 915
Income (\$)	16 740	6.87	3.96	27 190	10 215	12 625
Labour expenses (\$)						
Hand harvesting	205	0.08	0.05	0	271	126
Pruning (Total)	2 225	0.91	0.53	2 807	1 668	1 784
Canopy and crop mgt	2 135	0.88	0.50	1 913	1 932	1 401
Other wages	1 115	0.46	0.26	2 236	2 187	989
	5 680	2.33	1.34	6 955	6 055	4 300
Total labour expenses						
Other direct expenses (\$)						
Weed and pest control	803	0.33	0.19	1 089	687	774
Fertiliser and lime	125	0.05	0.03	71	58	284
Electricity	189	0.08	0.04	154	190	185
Vehicle	203	0.08	0.05	121	219	167
Fuel	341	0.14	0.08	296	517	260
Repairs & maintenance	609	0.25	0.14	920	564	440
General	2	0.00	0.00	0	7	0
Machine harvesting	799	0.33	0.19	963	758	842
Total other direct expenses (\$)	3 070	1.26	0.73	3 615	3 000	2 955
Total direct expenses (\$)	8 750	3.59	2.07	10 570	9 055	7 255
Gross Margin (\$/ha)	7 990	3.28	1.89	14 755	3 995	5 370
Gross Margin (\$/T)	915			1 210	710	815
Number in model	12			12	12	14

¹ Quartile analysis shows the average figures where the gross margin is at the lower or upper quartile, i.e. an indication of the features of higher and lower performance.



Merlot gross margin

The Hawke's Bay 2016 Merlot gross margin was \$10 090 per producing hectare, equivalent to \$1070 per tonne. This gross margin decreased by \$190 from last year. This season's gross margin had no contract grower participation therefore care must be taken in interpreting results or applying them to the entire industry. Feedback from contract growers at the benchmarking workshop was that demand is easing and prices paid per tonne to contract growers are facing downward pressure.

Average yield was 9.4 tonnes per producing hectare, 3 percent up on last year but slightly below the average of the past four years of 9.6 tonnes per hectare.

Large, consistent crops were reported and growers were having to bunch thin blocks to improve disease control and meet winery specifications.

Price per tonne was \$1945 which was marginally up on 2015. Contract growers were concerned prices were lower than this and both contract and winery growers agreed that demand for this variety has softened.

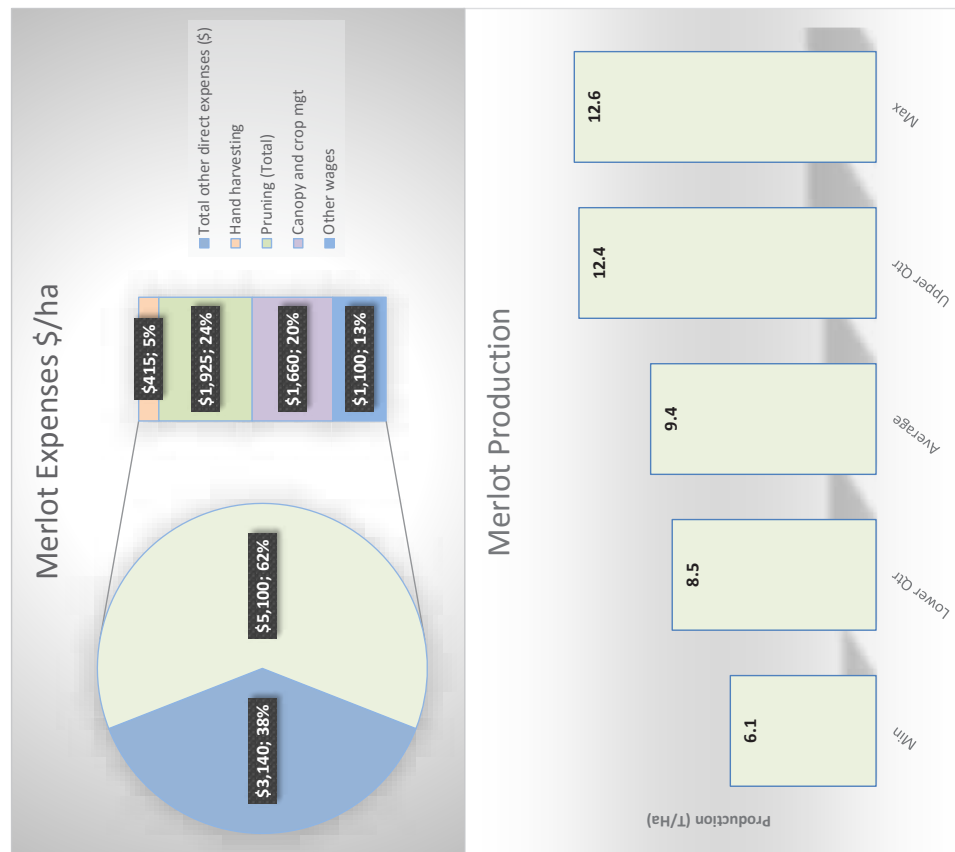
Merlot had the second highest labour and direct expenses and this is related to the crop requiring more thinning, leaf removal and pest and disease control than Sauvignon Blanc, but being spur-pruned have lower pruning costs than Chardonnay.

Vineyard Gross Margin Benchmarking

Region Hawkes Bay
Year 2016
Variety Merlot

Adjusted for unpaid labour	Average		\$ per producing Ha		
	per Ha	per vine per metre	Upper	Lower	per Ha
Unpaid FTE - number	0.1				0.1
Unpaid FTE - hours/ha	9				20
Vines/ha	2 733				
Row metres/ha	4 753		3 669	2 373	
Yield (Tonnes)	9.4	3.4kg	12.4	8.5	4 051
Income \$/tonne	1 945		1 960	2 095	1 925
Income (\$)	18 330	6.71	24 370	17 170	17 460
Labour expenses (\$)					
Hand harvesting	415	0.15	1 005	0	163
Pruning (Total)	1 925	0.70	1 363	3 291	1 389
Canopy and crop mgt	1 660	0.61	1 549	1 907	1 484
Other wages	1 100	0.40	268	601	1 129
	5 100	1.87	4 185	5 800	4 165
Total labour expenses					
Other direct expenses (\$)					
Weed and pest control	857	0.31	844	561	843
Fertiliser and lime	145	0.05	337	66	110
Electricity	252	0.09	241	310	235
Vehicle	224	0.08	341	174	143
Fuel	333	0.12	477	262	253
Repairs & maintenance	587	0.21	356	669	584
General	2	0.00	5	0	50
Machine harvesting	741	0.27	428	948	798
Total other direct expenses (\$)	3 140	1.15	3 030	2 990	3 015
Total direct expenses (\$)	8 240	3.01	7 215	8 790	7 180
Gross Margin (\$/ha)	10 090	3.69	16 620	10 255	10 280
Gross Margin (\$/T)	1 070		1 425	1 200	1 135
Number in model	11		11	11	12

¹ Quartile analysis shows the average figures where the gross margin is at the lower or upper quartile, i.e. an indication of the features of higher and lower performance.



Industry issues and developments

Seasonal impacts on profitability

Yields were up on last year for Sauvignon Blanc and Chardonnay, which improved the 2016 gross margins. Good conditions for flowering, fruit set and fruit ripening all contributed to the result. Rainfall was adequate and GDDs exceeded the long term average because of warm conditions from January onwards. A late rain event in March meant that some blocks incurred

disease pressure which caused crop loss in vulnerable situations.

Losses to powdery mildew were not as severe as reported last season. While disease pressure was moderate, growers have also improved their control through more vigilant monitoring and improved spray programmes.

Grower morale and business viability

While the gross margins were generally better this year than last, growers would like to see better prices to improve their viability.

A modest level of investment in the region is occurring, mostly by corporate wineries which are shifting towards managing their own blocks. Banks are looking favourably on investments where Sauvignon Blanc is being planted but, they view varieties such as Merlot as a risk due to the lack of market demand.

International markets make up 78 percent of New Zealand wine sales volume. The United States of America is a good market for Hawke's Bay wines given the region's variety mix. Existing markets are also wanting a range of varieties so marketers are seeking grapes other than Sauvignon

Blanc via their winery networks. Other factors temper the outlook. These include the social unrest and economic malaise in Europe and the uncertainty around the Chinese market, which is seen as promising but fickle.

Marketing Hawke's Bay wine as a premium product and improving its reputation is seen as a priority by participants. General consensus was that Hawke's Bay needs to continue building its reputation around a portfolio of premium wines. This would strengthen the demand for Chardonnay, which already has the beginnings of a great reputation, and for Merlot, which is still the most widely planted variety in Hawke's Bay (Vineyard Register report, 2015-2018, New Zealand Winegrowers).

Environmental and natural resource management

Growers in the region are anxious about the renewal of water permits as they become due. Water use has been a hot topic in Hawke's Bay in the past year and growers are concerned about the cost and certainty of water supply. The Hawke's Bay Regional Council's consultation with stakeholders over plan changes is ongoing.

Industry is concerned about biosecurity risks to the grape industry from possible incursion of exotic pests such as the spotted wing drosophila and the brown marmorated stink bug. These pests would have devastating effects on the New Zealand horticultural and viticultural industry if they became established in New Zealand.

Hot topics

Demand for Merlot is a serious concern, especially given that 80 percent of New Zealand's planted area of Merlot (approximately 1080 hectares) is planted in Hawke's Bay. Growers are frustrated that they are still being paid the same amount per tonne as they were back in 2008.

Marlborough Sauvignon Blanc also performed extremely well in 2016 with high average yields and good quality grapes. The success of Marlborough Sauvignon Blanc leads to a range of thoughts from Hawke's Bay growers. On the positive side, many believe that if Sauvignon Blanc does well then positive flow-on effects, such as increased investment and the ability of Sauvignon Blanc to open up markets for other varieties, benefit the whole industry.

On the other hand, some growers fear that the dominance of Sauvignon Blanc means that other varieties struggle to get recognition and that the whole industry is vulnerable to fluctuations in Marlborough's yield, quality and reputation.

Looking towards vintage 2017, a potential winter drought is of concern. There was only 27mm of rain in April-May 2016 compared to the long-term average of 138mm for this interval. Conditions are dry heading into winter and MetService has forecast a drier than normal winter period www.metservice.com/rural/monthly-outlook. This may impact next season if soil moisture levels are low during flowering and fruit set, putting vines under stress.

Wairarapa

Key parameters and financial results for Wairarapa vineyard gross margins

Year ended 30 June 2016	Pinot Noir
Total production ¹ (t/ha)	5.4
Average return (\$/t)	3 620
Grape income (\$/ha)	19 440
Vineyard direct expenses (\$/ha)	14 990
Gross Margin (\$/ha)	4 450
Gross Margin (\$/t)	830

¹ Grapes are harvested in the autumn, so the 2015/16 year refers to fruit harvested in autumn 2016.

Figures may not add to totals due to rounding.

Background

The MPI viticulture monitoring programme was reviewed in 2013 and the decision to develop gross margins of dominant grape varieties in Hawke's Bay was trialled for the 2015 season. The success of the trial has led to the continuation of the gross margin format and has also seen the expansion of the programme in Marlborough, Gisborne and Wairarapa using a data entry portal within New Zealand Winegrowers website.

The gross margin calculates the revenue minus direct expenses for growing, harvesting and marketing the crop. It does not take account of overheads such as administration, debt-servicing, tax, drawings or development and capital spending.

This is the first year of gross margin benchmarking in Wairarapa and 11 growers provided data for a total of 15 Pinot Noir blocks. The Gross Margin compares Wairarapa Pinot Noir to Marlborough in the same season.

Wairarapa weather data

Month	Growing Degree Days ¹			Rainfall (mm)		
	2015 ²	2016	Long Term Average	2015	2016	Long Term Average
July	15	6	11	97	62	85
August	11	18	20	90	48	78
September	36	14	46	70	52	51
October	63	60	71	40	20	74
November	114	98	120	52	11	50
December	195	159	202	25	11	65
January	260	264	247	9	35	46
February	187	285	218	31	13	46
March	203	214	184	27	8	49
April	112	133	99	77	46	58
May	53	123	53	55	70	67
June	12	31	20	73	40	80
Total	1 261	1 405	1 291	646	416	749

¹ GDD – growing degree days. GDDs are a temperature index, calculated by taking the average of the daily high and low temperatures compared with a baseline (10°C). They help predict the date that a flower will bloom or a crop reach maturity

² Year refers to year of harvest

Source Niwa (Martinborough Ews)



Key points

Wairarapa Pinot Noir achieved a gross margin of \$4450 per hectare, which was \$10 790 lower than Marlborough Pinot Noir gross margin in 2016. This was due to 36 percent lower yields and 50 percent higher labour costs.

Average yields for Wairarapa Pinot Noir were up by 87 percent compared to 2015³.

Weather conditions were typified by a cool late start to the growing season, followed by a dry cool flowering, a warm ripening period and some rainfall around harvest.

Average price reported by this grower group was \$3620, \$300 higher than the 2015 industry average price².

The significant increase in yield was due to good growing conditions, despite early predictions of only average Pinot Noir yields for 2016 due to cool flower initiation conditions in December 2014.

Growing degree days from July-November 2015 were 27 percent lower than the long term average and the season started later than usual. Spring frosts occurred in parts of the region with crop reduction reported in the Te Muna area.

Dry, low-wind conditions in November and December 2015 provided a good weather window for flowering which greatly assisted fruit set, despite temperatures being cool.

Temperatures were higher than average during the critical ripening months of January to March. This allowed some early blocks to harvest before the rainfall in early April, although blocks harvested later reported this rain had no effect on fruit quality.

The good fruitset and ideal ripening conditions led to excellent bunch weights across most of the district.

³ New Zealand Winegrowers Vintage Survey 2016.

Wairarapa gross margins

Pinot Noir gross margin - Key points

The Wairarapa Pinot Noir gross margin was \$4450 per producing hectare, equal to \$830 per tonne. This is 71 percent lower than the Marlborough Pinot Noir gross margin of \$15 240 per producing hectare.

While slightly later than usual, seasonal conditions were generally favourable for growing in 2016. Wairarapa produced 85 percent more Pinot Noir in 2016 compared to 2015³. This was primarily because 2015 was a very challenging season with yields reduced by low bunch numbers and a cool drought.

The average yield of 5.4 tonnes per hectare was 36 percent lower than the Marlborough gross margin survey group and reflecting Wairarapa growers targeting higher end wines and the regions challenging spring conditions in 2014 and 2015.

There was a range of yields, from 3.7 to 7.8 tonnes per hectare and prices from \$2800 to \$4300 per tonne, reflecting the high end market most Wairarapa growers are producing for.

Average price received for the survey blocks was up compared to 2015 at \$3620 per tonne. This is due to a shortage of supply from the low yields in 2015 and some contract blocks in the Te Muna area having poor 2016 yields due to frost damage.

The Wairarapa average Pinot Noir price was \$445 per tonne higher than the

Marlborough survey blocks but did not adequately compensate for the higher growing costs for Pinot Noir in Wairarapa.

Wairarapa labour expenses per hectare were significantly higher than Marlborough. While slightly higher vine density in Wairarapa contributed, pruning and canopy management costs were, respectively, 74 and 149 percent higher than Marlborough.

Pruning costs were \$3640 per hectare or \$1.26 per vine, compared to the Marlborough average of \$0.86 per vine, despite both regions using predominately the 2 cane Vertical Shoot Positioned (VSP) pruning style.

Only one of the 15 blocks in this survey was machine harvested. The hand harvest cost of \$321 per tonne was 40 percent higher than in Marlborough. This was largely due to lower yields as Wairarapa's hand-harvesting cost per metre of row was \$0.40 compared to the Marlborough average of \$0.50 per metre.

Despite disease pressure from their higher-rainfall climate than Marlborough, average chemical control costs were \$541 per hectare, 37 percent lower than Marlborough, aided by the greater labour input for canopy management reducing the presence of the key disease Powdery Mildew in the Wairarapa.

³ New Zealand Winegrowers Vintage Survey 2016.

Vineyard Gross Margin Benchmarking

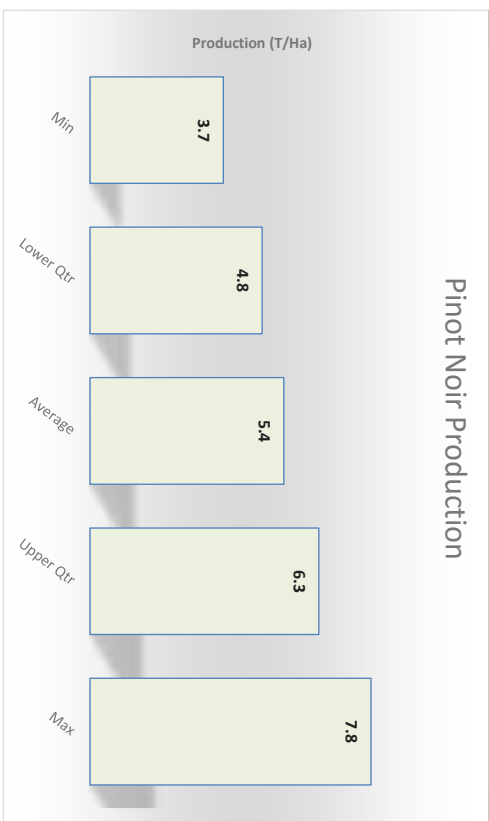
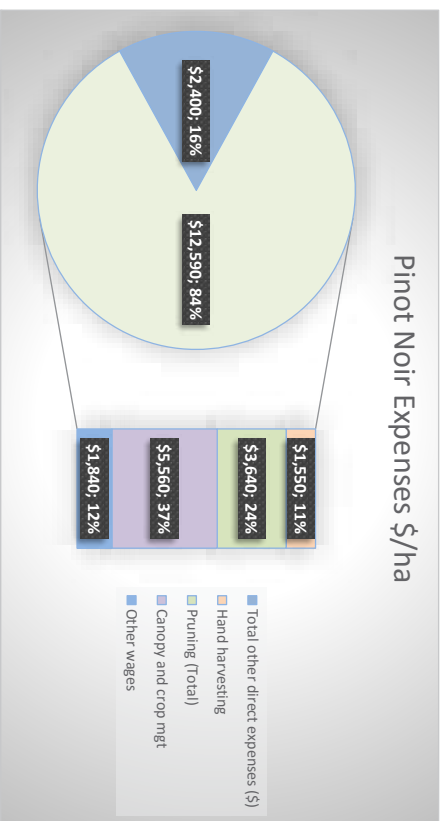
Region **Wgtn / Waikarapa**
Year **2016**

Variety **Pinot Noir**

Adjusted for unpaid labour	Average		\$ per producing Ha		Marlborough
	per Ha	per vine	Upper Margin ¹	Lower	
Unpaid FTE - number	0.2				per Ha 0.1
Unpaid FTE - hours/ha	63				22
Vines/ha	2 893		3 421	2 588	2 437
Row metres/ha	4 292				4 126
Yield (Tonnes)	5.4	1.9kg	1.3kg	6.3	4.8
Income \$/tonne	3 620		4 290	3 615	3 175
Income (\$)	19 440	6.72	4.53	26 725	15 515
Labour expenses (\$)					26 885

Hand harvesting	1 550	0.54	0.36	2 129	1 707	1 290
Pruning (Total)	3 640	1.26	0.85	1 766	4 916	2 095
Canopy and crop mgt	5 560	1.92	1.30	1 769	7 355	2 235
Other wages	1 840	0.64	0.43	1 034	1 397	2 770
Total labour expenses	12 590	4.35	2.93	6 700	15 375	8 390
Other direct expenses (\$)						
Weed and pest control	541	0.19	0.13	583	490	864
Fertiliser and lime	202	0.07	0.05	36	99	347
Electricity	165	0.06	0.04	82	187	401
Vehicle	231	0.08	0.05	54	272	87
Fuel	340	0.12	0.08	170	458	239
Repairs & maintenance	590	0.20	0.14	146	521	886
General	235	0.08	0.05	66	235	72
Machine harvesting	97	0.03	0.02	0	0	360
Total other direct expenses (\$)	2 400	0.83	0.56	1 140	2 260	3 255
Total direct expenses (\$)	14 990	5.18	3.49	7 840	17 635	11 645
Gross Margin (\$/ha)	4 450	1.54	1.04	14 770	3 840	15 240
Gross Margin (\$/T)	830			2 370	705	1 800
Number in model	15			15	15	31

¹ Quartile analysis shows the average figures where the gross margin is at the lower or upper quartile, i.e. an indication of the features of higher and lower performance.



Industry issues and developments

Wairarapa, in particular Martinborough, is a well-established wine growing region that has built a strong reputation for high quality Pinot Noir wine. Winery growers reported that this reputation, combined with strong distribution channels, is extremely important building blocks for their success. It is this reputation that has Pinot Noir prices approximately 10 percent above Marlborough prices.

Almost 80 percent of vineyards in Wairarapa are less than 10 hectares⁴ and almost 82 percent are winery-owned vineyards. This was reflected in the survey group with only two of the 15 vineyards being larger than 10 hectares and only three being contract grower vineyards.

The low gross margin, 71 percent lower than Marlborough, makes attracting new investment in the region challenging, especially for contract growers. Contract growers aim to contain their costs well below the averages reported in this gross margin model, to remain financially viable. Several contract grower vineyards are actively for sale. Few sales are occurring and some vineyards have been on the market for more than 12 months. It seems the vertically-integrated wine business with strong links to markets is the more successful model in the Wairarapa.

Other key issues identified by growers in Wairarapa included:

- Aging vines are lowering yields in some vineyards due to virus infections and many vines being on their own roots. Investment for redevelopment is low though due to low current returns.
- Windy and cool flowering conditions in most seasons constrain yields below other regions in most years.
- Water is generally fully allocated which is also restricting any further development in the region.
- Sustainable Winegrowing New Zealand is considered to be very positive and resonates with both growers and customers.
- Organic vineyard practices are viewed very positively by customers in nearby Wellington and also, increasingly, in international markets.

⁴ New Zealand Winegrowers Vineyard Register Report 2015-2018.

Marlborough

Key parameters and financial results for Marlborough vineyard gross margins

Year ended 30 June 2016	Sauvignon Blanc	Pinot Noir
Total production ¹ (t/ha)	15.9	8.5
Average return (\$/t)	1 805	3 175
Grape income (\$/ha)	28 780	26 885
Vineyard direct expenses (\$/ha)	8 775	11 645
Gross Margin (\$/ha)	20 005	15 240
Gross Margin (\$/t)	1 255	1 800

¹ Grapes are harvested in the autumn, so the 2015/16 year refers to fruit harvested in autumn 2016.

Figures may not add to totals due to rounding.

Background

The MPI viticulture monitoring programme was reviewed in 2013 and the decision to develop gross margins of dominant grape varieties in Hawke's Bay was trialled for the 2015 season. The success of the trial has led to the continuation of the gross margin format and has also seen the expansion of the programme in Marlborough, Gisborne and Wairarapa using a data entry portal within New Zealand Winegrowers website.

The gross margin calculates the revenue minus direct expenses for growing, harvesting and marketing the crop. It does not take account of overheads such as administration, debt-servicing, tax, drawings or development and capital spending.

This is the second year of gross margin benchmarking in Marlborough with 36 growers providing data for a total of 50 Sauvignon Blanc and 31 Pinot Noir blocks.



Key points

Marlborough Sauvignon Blanc gross margin was \$20 005 per hectare while Pinot Noir achieved a gross margin of \$15 240 per hectare.

Average yields for Marlborough Sauvignon Blanc were up by 39 percent compared to 2015¹. While Pinot Noir was 60 percent higher than the 2015 gross margin survey group.

Seasonal conditions were very dry until the end of December 2015, and early varieties and areas had excellent flowering conditions. January to March was warmer than average. Rain events in January and close to harvesting increased average berry weight above the long term average.

Average Sauvignon Blanc price reported by this gross margin grower group was \$1805 per tonne, identical to the Marlborough Model Vineyard survey group. Pinot Noir for the gross margin group averaged \$3175 per tonne, \$90 higher than the Marlborough Model Vineyard survey group.

¹ New Zealand Winegrowers Vintage Survey 2016 and New Zealand Winegrowers Vineyard Register Report 2015-2018.

Marlborough gross margins

Sauvignon Blanc gross margin - Key points

The Marlborough Sauvignon Blanc gross margin was \$20 005 per producing hectare, equal to \$1255 per tonne. This is 49 percent higher than the Hawke's Bay gross margin of \$13 455 per producing hectare.

Favourable climatic factors including a warm ripening period and significant and timely rainfall events eventuated in a high yield, with average berry number and weight well above the long term average².

Overall Marlborough produced 40 percent more Sauvignon Blanc in 2016 than in 2015³.

The average yield in the gross margin survey group of 15.9 tonnes per hectare was 12 percent higher than the Hawke's Bay gross margin survey group.

There was a range of yields, 7.2 to 24.9 tonnes per hectare, reflecting the varying climatic conditions in Marlborough sub regions from Awatere to Wairau and their adjoining valleys.

Prices varied from \$500 (1 block) to \$1985 per tonne, with an average price of \$1805, identical to the Marlborough Model Vineyard survey group. This was 24 percent higher than Hawke's Bay.

Total direct expenses for Sauvignon Blanc were \$8775 per hectare, \$1460 per hectare higher than the Hawke's Bay gross margin survey group but \$2870 lower than for Marlborough Pinot Noir.

Marlborough expenses were higher than for Hawke's Bay Sauvignon Blanc, particularly for other wages and several direct spending categories. The higher spending is supported by the higher yield and price received by Marlborough growers and encouraged by Marlborough's drier, less-fertile growing conditions.

Marlborough spending to grow Sauvignon Blanc is less than for Pinot Noir, mainly because of labour activities required for growing. There is little hand-harvesting for Sauvignon Blanc and less labour input for canopy and crop-management activities.

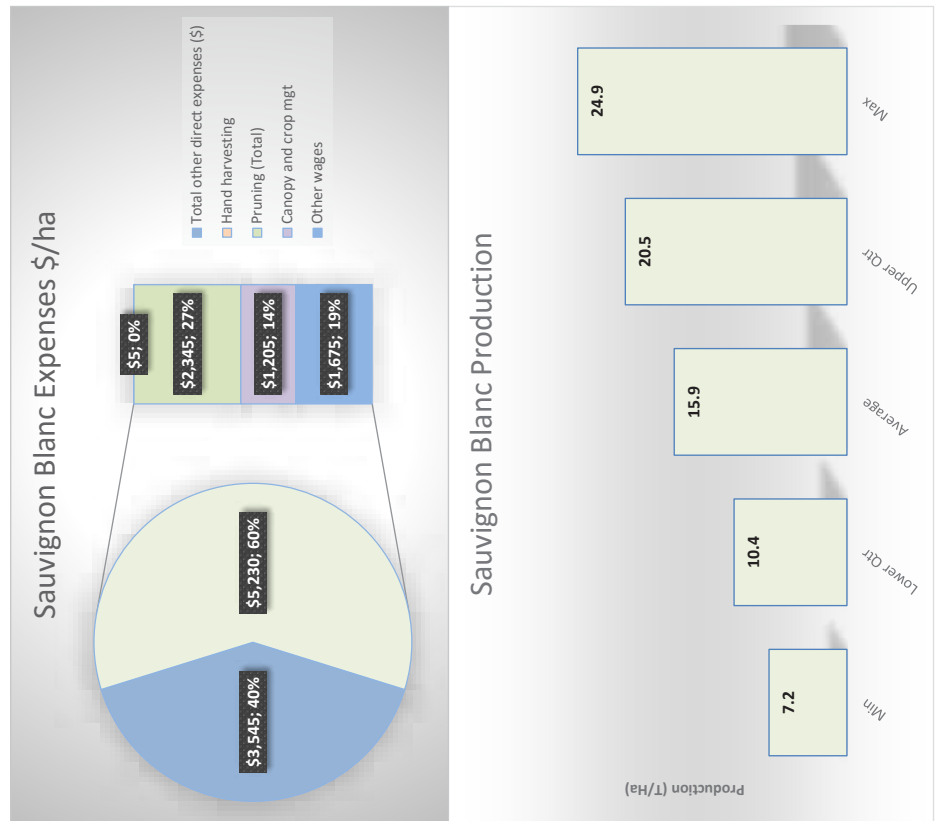
Pruning style was predominately 3 cane Vertical Shoot Positioned (VSP), averaging 3.1 canes per vine, with pruning costs \$2345 per hectare or \$1.07 per vine. This is almost identical to the Hawke's Bay average of \$1.08 per vine where pruning was a mix of 2, 3 and 4 cane VSP, averaging 3.3 canes per vine.

² Pers comm, Rob Agnew, Plant and Food Research, May 2016.

³ New Zealand Winegrowers Vintage Survey 2016.

Vineyard Gross Margin Benchmarking									
Region		Marlborough		Hawkes Bay		Hawkes Bay			
Year	2016								
Variety	Sauvignon Blanc		Sauvignon Blanc		Sauvignon Blanc		Sauvignon Blanc		
Adjusted for unpaid labour	Average	\$ per producing Ha		Margin ¹		per Ha			
	per Ha	per vine	per row	Upper	Lower	Upper	Lower	Upper	Lower
	per metre	per metre	metre						
Unpaid FTE - number	0.2								0.2
Unpaid FTE - hours/ha	18								20
Vines/ha	2 190			2 146	2 156				2 116
Row metres/ha	3 911								4 146
Yield (Tonnes)	15.9	7.3kg	4.1kg	20.5	10.4				14.2
Income \$/tonne	1 805			1 740	1 800				1 460
Income (\$)	28 780	13.14	7.36	35 445	18 685				20 770
Labour expenses (\$)									
Hand harvesting	5	0.00	0.00	0	10				215
Pruning (Total)	2 345	1.07	0.60	2 422	1 852				2 290
Canopy and crop mgt	1 205	0.55	0.31	1 122	895				1 315
Other wages	1 675	0.76	0.43	1 417	1 958				740
	5 230	2.39	1.34	4 960	4 715				4 560
Total labour expenses									
Other direct expenses (\$)									
Weed and pest control	877	0.40	0.22	877	810				637
Fertiliser and lime	315	0.14	0.08	190	504				125
Electricity	270	0.12	0.07	113	416				149
Vehicle	67	0.03	0.02	54	58				175
Fuel	149	0.07	0.04	151	126				528
Repairs & maintenance	993	0.45	0.25	579	1 473				429
General	106	0.05	0.03	76	60				5
Machine harvesting	768	0.35	0.20	766	747				707
Total other direct expenses (\$)	3 545	1.62	0.91	2 805	4 195				2 755
Total direct expenses (\$)	8 775	4.01	2.24	7 765	8 910				7 315
Gross Margin (\$/ha)	20 005	9.13	5.12	22 720	15 770				13 455
Gross Margin (\$/T)	1 255			1 310	1 065				945
Number in model	51			51	51				12

¹ Quartile analysis shows the average figures where the gross margin is at the lower or upper quartile, i.e. an indication of the features of higher and lower performance.



Pinot Noir gross margin

The Marlborough Pinot Noir gross margin was \$15 240 per producing hectare, equal to \$1800 per tonne. This is 242 percent higher than the Wairarapa Pinot Noir gross margin of \$4450 per producing hectare.

Favourable climatic factors including a warm ripening period and significant and timely rainfall events eventuated in a high yield. Average berry number and weight were well above the long term average.

Overall Marlborough produced 48 percent more Pinot Noir in 2016 than in 2015⁴.

The average yield of 8.5 tonnes per hectare in the gross margin survey group is 57 percent higher than in the Wairarapa gross margin survey group.

There was a range of yields, from 6.0 to 13.0 tonnes per hectare and prices from \$1800 to \$4300 per tonne, reflecting the wide range of markets Marlborough growers are producing for.

Average price received for the survey blocks was \$3175 per tonne, similar to the 2015 price and \$445 per tonne lower than the Wairarapa survey blocks.

Total direct expenses for Pinot Noir were \$11 645 per hectare, \$2875 higher than Marlborough Sauvignon Blanc.

Marlborough labour expenses per hectare were significantly lower than Wairarapa. While slightly higher vine density in Wairarapa contributed, pruning and canopy management costs in Marlborough were, respectively, 74 and 42 percent lower than in Wairarapa.

Pruning style was predominately 2 cane Vertical Shoot Positioned (VSP) with pruning costs \$2095 per hectare or \$0.86 per vine compared to the Wairarapa average of \$1.26 per vine where pruning was also almost exclusively 2 cane VSP.

Seven of the 31 blocks in this survey were machine harvested. These growers averaged \$196/km for machine harvesting, while blocks within the survey group that were solely hand harvested averaged \$229 per tonne⁵.

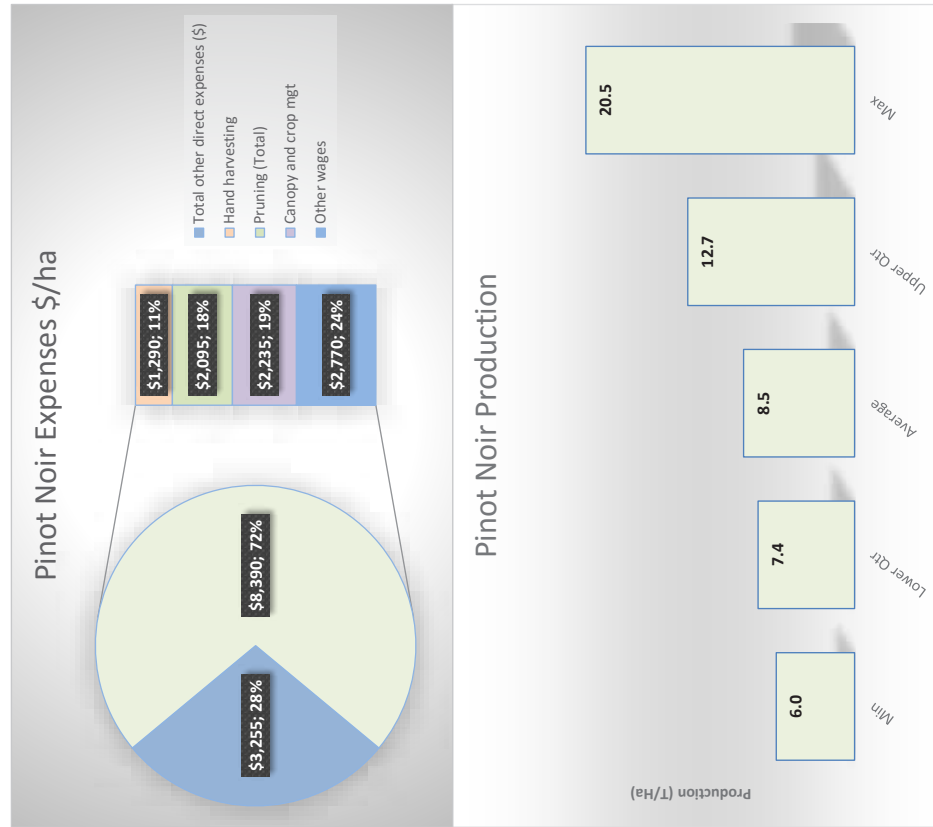
The main differences in operating expenditure between Marlborough Pinot Noir and Sauvignon Blanc were labour related costs reflecting the higher level of input required to produce high quality Pinot Noir. Overall Pinot Noir labour was 61 percent higher, primarily canopy and crop management (\$1035 higher), hand harvesting (\$1285 higher) and other wages (\$1100 higher).

⁴ New Zealand Winegrowers Vintage Survey 2016.

⁵ The gross margin reports both hand harvesting and machine harvesting to reflect combined average costs. In reality only 4 blocks within the group used both hand and machine harvesting.

Vineyard Gross Margin Benchmarking									
Region		Marlborough		Average		\$ per producing Ha		Wgtn /	
Year	2016		Margin ¹		Upper		Lower		Wairarapa
Variety	Pinot Noir		per Ha	per vine	per row	metre	per Ha	per Ha	
Adjusted for unpaid labour									
Unpaid FTE - number	0.1								0.2
Unpaid FTE - hours/ha	22								63
Vines/ha	2 437			2 186	2 570				2 893
Row metres/ha	4 126								4 292
Yield (Tonnes)	8.5	3.5kg	2.1kg	12.7	7.4				5.4
Income \$/tonne	3 175			2 950	3 245				3 620
Income (\$)	26 885	11.03	6.52	36 445	22 935				19 440
Labour expenses (\$)									
Hand harvesting	1 290	0.53	0.31	1 520	1 176				1 550
Pruning (Total)	2 095	0.86	0.51	1 848	2 255				3 640
Canopy and crop mgt	2 235	0.92	0.54	1 751	2 534				5 560
Other wages	2 770	1.14	0.67	1 583	3 538				1 840
	8 390	3.44	2.03	6 705	9 500				12 590
Total labour expenses (\$)									
Weed and pest control	864	0.35	0.21	596	1 036				541
Fertiliser and lime	347	0.14	0.08	342	355				202
Electricity	401	0.16	0.10	451	334				165
Vehicle	87	0.04	0.02	136	43				231
Fuel	239	0.10	0.06	399	156				340
Repairs & maintenance	886	0.36	0.21	853	900				590
General	72	0.03	0.02	9	102				235
Machine harvesting	360	0.15	0.09	255	449				97
Total other direct expenses (\$)	3 255	1.34	0.79	3 040	3 375				2 400
Total direct expenses (\$)	11 645	4.78	2.82	9 745	12 875				14 990
Gross Margin (\$/ha)	15 240	6.25	3.69	22 880	13 645				4 450
Gross Margin (\$/T)	1 800			2 080	1 495				830
Number in model	31			31	31				15

¹ Quartile analysis shows the average figures where the gross margin is at the lower or upper quartile, i.e. an indication of the features of higher and lower performance.



If you have any questions relating
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the model please contact :

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