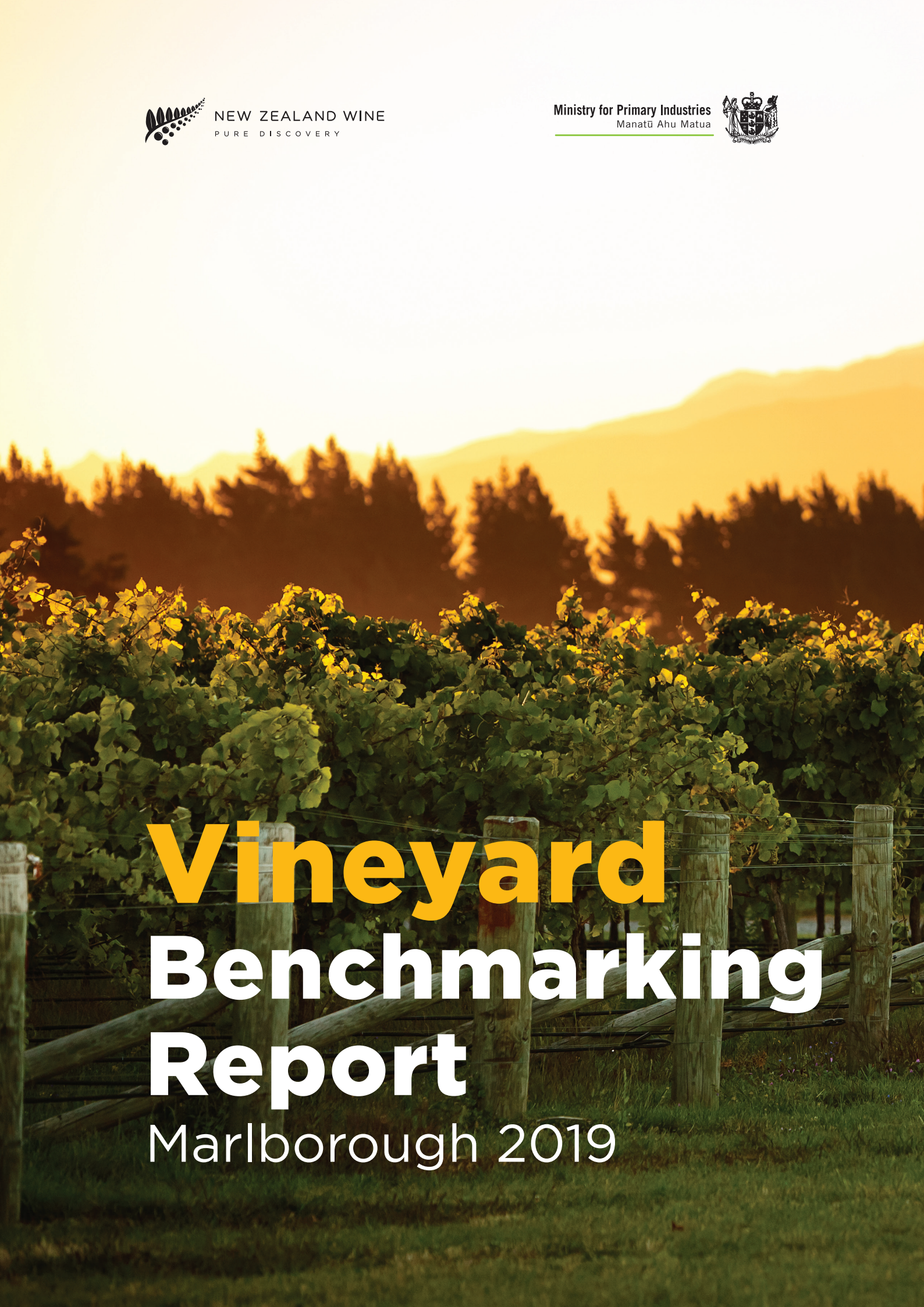
NEW ZEALAND WINE
PURE DISCOVERY

Ministry for Primary Industries
Manatū Ahu Matua



Vineyard Benchmarking Report

Marlborough 2019

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New Zealand Winegrowers and the Ministry for Primary Industries would like to express our thanks to the participant vineyards and wineries for their ongoing support of our vineyard benchmarking programme. Also special thanks to those that attended the July meeting to validate the preliminary findings and Spy Valley for providing the venue.

In collaboration with

Ministry for Primary Industries
Manatū Ahu Matua

Cover image courtesy of Destination Marlborough

Marlborough Model - 2019 Viticulture Benchmarking

Key Performance Indicators

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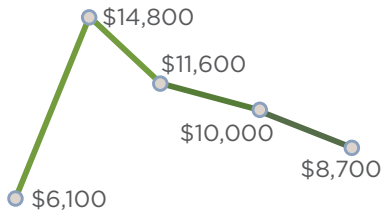
Profit Before Tax ($)

$8,700 per hectare

↓13% to June 2019



Profit $ Per Ha
Last 5 years

Income
Per Hectare

$24,350 to June 2019

↓ 1%

Working Expenses
Per Hectare

$12,235 to June 2019

↑ 10%

EBIT[1] total capital, for the Model

4.5%

↓ 13%

[1]Earnings before interest and tax reflects vineyard profit before tax and interest payments, then relates this figure to total capital employed.

Production
Average Yield

12.5 tonnes per hectare

↓ 2%

Production
S Blanc Yield

14.0 tonnes per hectare

no change

Price
S Blanc Price

$1,855 dollars per tonne

↑ 2%

Vintage 2020 Outlook grape grower view as at May 2019

Growers are cautiously optimistic regarding the year ahead with growers forecasting a similar crop up 6 percent on the outturn achieved in 2019. Growers are hoping for an increase in grape prices in 2020, to cover increasing working expenses. Underlying industry confidence however is still positive underpinned by strong demand for Sauvignon Blanc.

*figures are rounded for ease of reading

MARLBOROUGH VINEYARD MODEL The Marlborough model remains at 30 producing hectares and for 2019 data was sourced from 50 vineyards. Twelve vineyards are located in the Awatere Valley and 38 vineyards in the Wairau Valley. There are 32 contract growers and 18 winery-operated vineyards in the survey group. Twelve of the vineyards are 0-10 hectares, 9 are 10-20 hectares, 15 are 20-50 hectares, and 14 are 50 hectares or larger. Sauvignon Blanc is the dominant grape variety in the model representing 78 percent of the producing area, followed by Pinot Noir, Chardonnay, and Pinot Gris. Riesling was removed from the model in 2019. Five vineyards are Bio-Gro certified.

Key points

The 2019 model profit before tax was down 13 percent to $8,700 per hectare compared with 2018 and 21 percent down compared with the average of 2014-18.

2018/19 was a season of two halves, much like the previous year. Although it proved to be the complete opposite of 2017/18 with regular rainfall events up to Christmas, followed by a very dry and hot period January through to March.

Cool, cloudy and wet conditions during the early flowering period reduced fruit set, particularly for the varieties Pinot Noir, Pinot Gris, and Chardonnay.

Hot and dry conditions in January and February led to a long period of water shortages for some growers in the Wairau Valley, which impacted on berry weight and yield.

The hot and dry weather brought forward the ripening process, leading to an early and orderly harvest and low disease pressure. Winemakers report that it is some of the best quality fruit received for many vintages.

Vineyard model yield decreased 2 percent compared with 2018 and down 7 percent compared with the 2014-18 average. Sauvignon Blanc yield was the same as 2018 at 14 tonnes per hectare but was a 6 percent decrease compared with the 2014-18 average.

Average prices were up just 1 percent over 2018 at $1,945 per tonne, with Sauvignon Blanc up 2 percent at $1,855. The 2019 model Sauvignon Blanc average price is 6 percent higher than the 2014-18 average.

Net cash income was marginally down on 2018, at $24,350 per hectare.

Vineyard model working expenses rose significantly, up 10 percent over 2018 and up 18 percent compared with the average of 2014-18, mainly due to higher wage rates.

Key parameters, Financial Results for the Marlborough vineyard model

Year ended 30 June	2009-18	2014-18	2018	2019
	10-year average	5-year average		
Producing area (ha)	30	30	30	30
Total production[1] (t)	363	403	382	374
Average production (t/ha)	12.1	13.4	12.7	12.5
Average return ($/t)	1,695	1,842	1,930	1,945
Sauvignon Blanc return ($/t)	1,588	1,747	1,825	1,855
Net cash income ($)	623,850	749,260	740,700	730,500
Vineyard working expenses ($)	280,955	310,340	334,000	367,100
Vineyard profit before tax ($)	237,525	329,900	301,300	261,000
Vineyard surplus for reinvestment[2] ($)	145,690	178,460	172,700	152,200
EBIT/Total Capital	5.2%	6.7%	5.2%	4.5%

Notes:

The vineyard model is based on an owner-operator business structure and from 2014 is representative of both contract and winery growers.

Figures may not add exactly to totals, due to rounding.

[1] Grapes are harvested in the autumn, so the 2019 year refers to fruit harvested in autumn 2019.

[2] Vineyard surplus for reinvestment is the cash available for investment on the vineyard or for principal payments, after meeting living costs. It is calculated as the vineyard profit after tax plus depreciation less drawings/living expenses.

Marlborough Model

Marlborough Profit Drivers

	2019	2020 budget	Comment
Weather	Warm spring with regular rainfall events. December cloudy with rain during flowering. Very hot and dry January and February	Typical	• December 2018 sunshine hours were significantly down compared with both long-term average (LTA) and December 2017. • Cloudy and wet conditions during flowering reduced fruit set, particularly in the early flowering varieties. • Blenheim received only 12 mm rain in January and February combined, compared with 261 mm for the same period in 2018. • The January mean temperature was 2.5°C above LTA, while February and March both experienced over 1°C above LTA. • Hot dry conditions accelerated ripening and reduced disease pressure but also reduced berry weights, particularly where water shortages were experienced.
Yields	↓	↑	• A 2 percent decrease in 2019 compared with 2018 and a 7 percent decrease compared with the 2014–18 average. • In 2020, a 6 percent increase in yield is budgeted to return to average yields.
Prices	→	↑	• The model average price was up 1 percent compared with 2018 and Sauvignon Blanc was up by 2 percent. Growers are budgeting on a modest increase in grape prices in 2020 to cover increases in cost.
Expenditure	↑	↑	• A 10 percent increase compared with 2018 and an 18 percent increase compared with the 2014–18 average. In part, the increases are due to the increase in the minimum wage. • In addition to rising labour costs there have been significant increases in rates and diesel fuel prices, and continuing increases in pest and disease control costs. • The latter is due to increased incidence of mealy bug and trunk disease as well as ongoing powdery mildew pressure. • Forecast to increase in line with minimum wage rises in 2020.
Profit before tax	↓	↑	• 13 percent down compared with 2018 and a 21 percent decrease compared with the 2014–18 average. Increased forecast yields would improve profit in 2020.
Morale	→		• A definite feeling of relief to have had a much kinder vintage climatically, compared with the previous two, but rising costs and static prices are ongoing concerns.

Financial Performance of the Marlborough Viticulture Model in 2019

Weather

Month	Growing degree days[1] (GDD)			Rainfall (mm)		
	2018	2019	Long Term Average[3]	2018[2]	2019	Long Term Average[3]
October	121	118	105	32	34	62
November	154	152	146	16	63	46
December	270	233	217	22	54	47
January	331	331	256	80	4	43
February	244	248	226	181	8	39
March	219	236	199	54	95	38
April	115	99	111	52	80	56
Total	**1,457**	**1,417**	**1,259**	**438**	**337**	**331**

[1] GDD – growing degree days. GDDs are a temperature index, calculated by taking the average of the daily high and low temperatures each day compared with a baseline (10 degrees Celsius). They help predict the date that a flower will bloom or a crop reach maturity. Source NIWA (Blenheim).

[2] Year refers to year of harvest.

[3] LTA is 1996 to 2019.

2018/19 was the second season in a row of two distinct weather halves, albeit the opposite pattern to 2017/18. Regular rainfall events occurred through the early summer until Christmas, with lower than normal sunshine hours in December. From New Year, the weather became very hot and dry through January and February, until a significant rain event on the 8 and 9 March broke the drought.

Rainfall of 117 mm in November and December combined, was 126 percent of the NIWA Long Term Average (LTA) but significantly more came in regular, smaller events. December 2018 only recorded 213 sunshine hours, just 66 percent of the 319 hours recorded in December 2017. The cloudy, damp weather coincided with flowering and led to poor pollination in many blocks, and in particular for the varieties Pinot Noir, Pinot Gris and Chardonnay. This was the main reason for the reduction in the model yields of these varieties.

After rain on Christmas day, these events ceased and only 12 mm was received in Blenheim for the whole of January and February, a stark contrast to the 261 mm that deluged the area in 2018. Although 95 mm was received in March, it came in only two significant events - the first on 8-9 March and the second on the 31 March-1 April. These two events did not cause any significant disease or quality issues for most growers. As the harvest was early, rain events later in April did not cause any major quality issues, with most fruit harvested prior to 19 April (Good Friday).

Although Growing Degree Days (GDDs) at 1,417 were slightly lower than 2017/18, they were still 13 percent above the LTA.

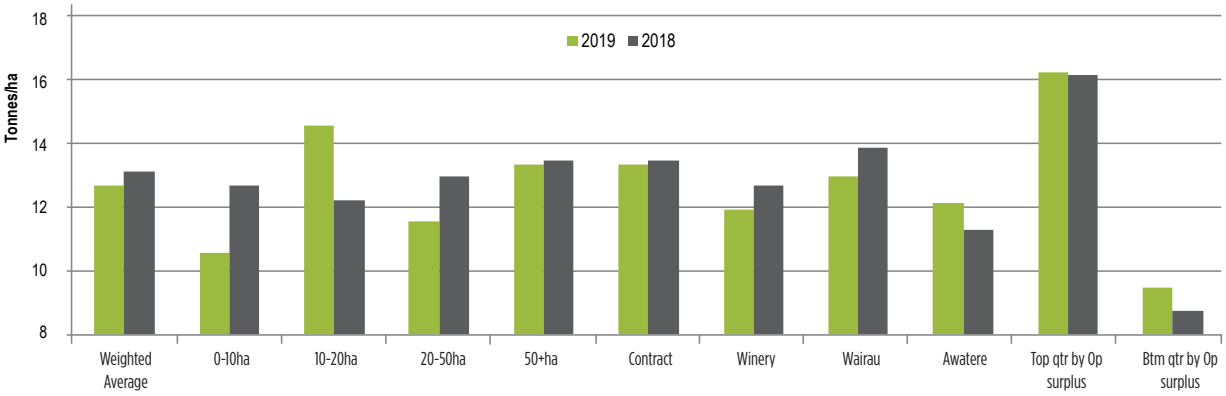
The mean temperature of 16 degrees Celsius was 0.8 degrees above LTA and 2018/19 is the sixth warmest season on record since 1973/74, following on from the record warmest in 2017/18.[1]

There were a few more frost events in the spring of 2018, compared with 2017, but only some isolated pockets of significant damage.

Winemakers across the region have been enthusiastic about the fruit quality received in vintage 2019. With low disease incidence, early ripening and good weather around harvest, the vintage was far more controlled than the weather compacted harvest of the previous two seasons.

Yields

Figure 1. Average Yield - All Varieties



The vineyard model average yield was 12.5 tonnes per hectare. Although only a 2 percent decrease compared with 2018, it is a 7 percent decrease compared with the 2014-18 average, but still 3 percent higher than the 10-year average for 2009-18. Figure 1 shows the average yield for all varieties compared to 2018, along with groupings for vineyard size, business type, sub region, and by top and bottom quartile.

Sauvignon Blanc yield of 14.0 tonnes per hectare is the same as the 2018 vintage and was a 6 percent decrease compared with the 2014-18 average, but one should note that the average includes three of the highest model yield vintages recorded.

[1] Plant and Food climate report, Winepress May 2019.

Sauvignon Blanc yields ranged from 9 to 20 tonnes per producing hectare in the 2019 survey group for mature blocks.

The early flowering varieties took a yield hit due to poor flowering conditions. Pinot Noir yields were down 15 percent and Pinot Gris down 23 percent compared with the 2014-18 average and an 8 and 9 percent decrease respectively compared with the 2009-18 average. Chardonnay yields were also well down, with between a 23 and 31 percent decrease compared with the 10-year average.

In the Awatere Valley, growers average yield for all varieties increased by 6 percent compared with 2018, whereas the Wairau grower's yield was reduced by 6 percent. The Awatere River did not come under the same level of abstraction restrictions as the Wairau River, as rain events favoured the Awatere catchment, and most growers had an adequate water supply through the season. This, coupled with more moderate local temperatures during the heatwave in January and February, aided the Awatere production.

New Zealand Winegrowers pre-vintage survey for 2019 concluded that this was now the third vintage in a row where yields are lower than expected and growers report that winery yield limits (caps) have remained consistently at higher levels, as wine companies have sought to secure supply and meet demand.

In 2019 only two growers in the model sold excess Sauvignon Blanc fruit over yield caps at discounted prices. Other growers reported cases where the receiving winery was happy to accept additional volume to meet demand. The natural crop moderation due to poor flowering conditions kept many blocks at or below their yield caps.

Quality

The vineyards in the model group harvested all their producing area and no penalties for poor quality were reported.

Winemakers across the region have been overjoyed with the quality of vintage 2019 fruit and expect there to be some stunning wines produced across the varieties. Early ripening, moderate yields and low disease pressure, alongside the ability to harvest fruit at optimum parameters, all combined to produce the ideal vintage.

Sauvignon Blanc average sugar levels were 21.2 Brix for the whole model group, compared with 21.0 Brix in 2018 and were around the long-term average. Importantly, target Brix was achieved relatively early. Wineries were also monitoring falling acidity, due to warm days without cool nights, and often harvested fruit based on flavour and acidity, rather than sugar levels.

The Awatere Valley growers in the model achieved an average Sauvignon Blanc Brix higher than the Wairau, at 21.6 compared with 21.0 for the Wairau Valley growers. More moderate temperatures in the Awatere Valley during the heatwave in January and February, as well as adequate irrigation water availability, facilitated better ripening conditions compared with the Wairau Valley.

The lower yields of Pinot Noir coupled with the excellent harvest conditions are expected to produce some exceptional table wines.

Prices

Model group average price at $1,945 per tonne rose just 1 percent, compared with 2018 and is 6 percent up compared with the 2014-18 average.

Sauvignon Blanc at $1,855 per tonne increased 2 percent, compared with 2018. Figure 2 shows the spread of Sauvignon Blanc prices by category

Only 0.5 percent of Sauvignon Blanc harvested over winery yield limits was sold at a lower price, compared with 2.5 percent in 2017 and 5.0 percent in 2016.

Pinot Noir table wine prices continue to rise, with a 5 percent increase compared with 2018 and 9 percent higher than the 2014-18 average. A significant part of the increase in price was due to more Pinot Noir fruit going into higher value premium table wine, rather than Rosé, as there was a limited volume and excellent quality.

Figure 2. Return - Sauvignon Blanc $/tonne

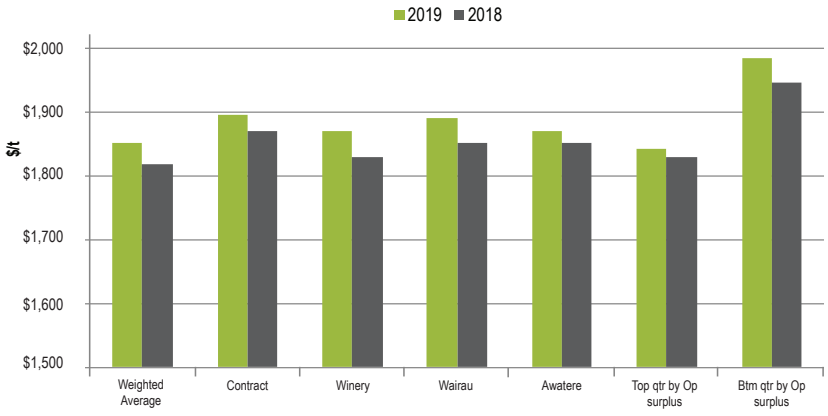
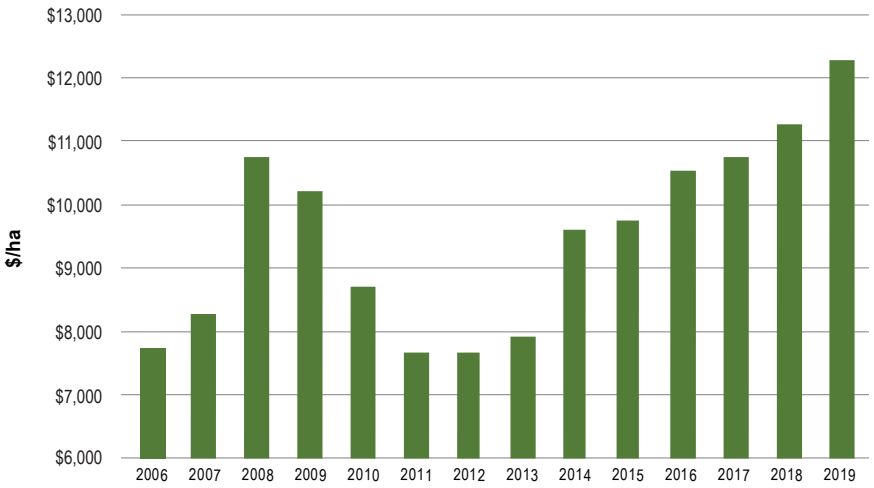


Figure 3. Vineyard working expenses $/ha



Expenditure

Vineyard model working expenses rose sharply to $12,235 per hectare in 2019, a 10 percent increase compared with 2018 and an 18 percent increase compared with the average of 2014-18. Figure 3 shows how vineyard working expenses have increased since the low of $7,650 per hectare in 2012.

Labour expenses rose 8 percent compared with 2018, reflecting wage increases and high demand for all types of labour across the industry. There was a minimum wage increase of 5 percent in April 2018 which influenced the increase in cost for many of the manual labour operations:

- pruning increased 8 percent and was the main labour expense that exceeded a 5 percent increase. The increase in pruning costs was influenced by a significant change in the cost of machine pruning, which was double that of 2018. This is due to a move to machine 'pre-topping' and then hand stripping, which has become favoured by some contractors and growers as a compromise between the high cost and higher-quality result and lower-cost machine stripping;
- most of the other labour expenses have increased around 5 percent, reflecting increases in wages and contractor costs, rather than significant changes in the level of canopy management or other tasks;
- although less crop moderation was required than in 2018, many growers still used machine shaking for disease control.

Pest, disease and weed control costs continue to rise. Crop protection chemical costs increased 6 percent, compared with 2018, after a 10 percent rise in the previous year. Growers continue to utilise an intense preventative programme for powdery mildew control, including the use of more expensive chemistry. Mealy bug is rapidly increasing around the district with the associated control costs. Most growers are now addressing grapevine trunk disease by spraying or painting products after making pruning cuts.

Fertiliser inputs have been rising since 2015, as growers have appreciated the importance of adequate nutrition to maintain high yields and quality. Nutritional expenses have increased more than fertiliser inflation, due to the increased use of higher priced fertigation and foliar products. Several growers in the survey are using mulches, such as compost derived from grape marc.

Irrigation costs (electricity and water) increased 28 percent, compared with 2018, but this was a return to average levels as 2017/18 was a particularly low-cost season due to high summer rainfall. Although there was a very hot and dry period in early 2019, the period up to Christmas 2018 required very little irrigation due to regular rainfall.

Water restrictions also reduced potential irrigation application. Total irrigation for the season was close to the long-term average across all sites using Fruition Horticulture's soil moisture monitoring service.

The Southern Valley's Irrigation scheme and abstraction directly from the Wairau River was shut down for over five weeks in February and March 2019.

Four of the model growers had no alternative source of water, so they purchased and carted in water, which in one case, trebled the grower's individual irrigation cost. Others had a limited alternative supply that was rationed out, which reduced operating costs compared with an unrestricted season and also reduced yields in many of these cases.

Fuel costs were significantly increased for the model group. Diesel fuel prices increased 15 percent, compared with 2018.

Machine harvesting costs were up 7 percent, compared with 2018 and following a 6 percent rise in 2017.

This reflects increases in wages and fuel costs.

Rates were up 19 percent across the group compared with 2018. This was due to a rates revaluation released in September 2017, which has been utilised for the rating period 1 July 2018 to 30 June 2021. Values for land and improvements increased between 19 and 38 percent in the Marlborough district.

Levies and subscriptions increased, mainly due to an increase in the New Zealand Winegrowers Grape Levy, up from 0.675% of grape income in 2018 to 0.750% in 2019.

Financial Result

Net cash income for the model at $24,350 per hectare was very similar to 2018 at $24,690. However, the significant increase in vineyard working expenses has decreased profit before tax by 13 percent to $8,700 per hectare, compared with 2018. Figure 4 shows the profitability trends over the past five seasons.

The model profit before tax is a 21 percent decrease compared with the average for 2014-18 of $11,000 per hectare.

17 participants out of 50 invested over $10,000 in capital expenditure on their vineyard in 2019, mostly on tractors, machinery, utility vehicles and vineyard buildings.

Eight growers in the group carried out new development or redevelopment in 2019.

Figure 4. Marlborough vineyard model profitability trends

Vineyard development continues at a reduced pace in Marlborough, with several larger developments being undertaken by growers from outside of the model group.

Table 1 from New Zealand Winegrower's Vineyard Register shows producing hectares are still increasing but at a slower pace than 2015-18, with new plantings predominantly Sauvignon Blanc

Vineyard property values were perceived by the group to be static for the second year in a row, after significant increases between 2015 and 2017. The average vineyard value in the model is $221,400 per planted hectare.

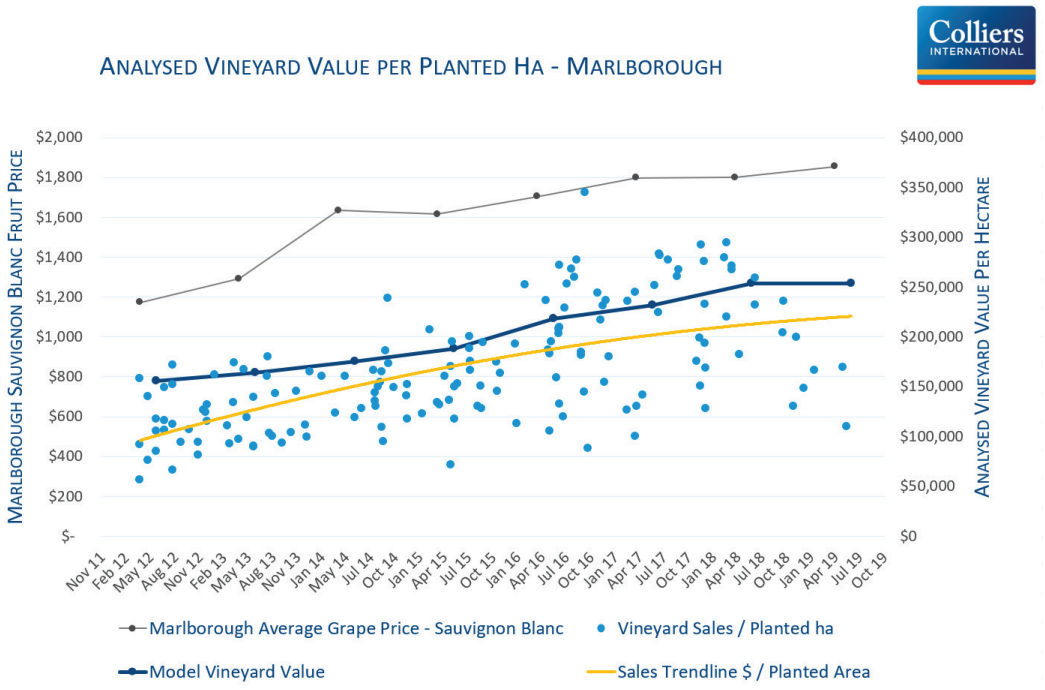
Tim Gifford of Colliers International produces an independent valuation of the model vineyard (see Figure 5) and currently assesses the value of the model vineyard, if it were located on the central Wairau plains, to be the same as 2018, at $253,000 per planted hectare.

Table 1. New Zealand Winegrowers vineyard register producing hectares 2019.

Producing HA	2018	2019[1]	2020
Marlborough total	26,288	26,850	27,200
Change	1,045	562	350
Marlborough total %	4.1%	2.1%	1.3%
Sauvignon Blanc	20,880	21,415	21,671
Change	961	535	256
Sauvignon Blanc %	4.8%	2.6%	1.2%

[1] Growers estimated producing area.

Figure 5. Vineyard sales and value – Colliers International



Quartile Analysis

The quartile analysis is compiled by sorting individual vineyard results from highest to lowest based on their operating surplus, to identify the features of the higher and lower performing vineyards.

The best performing vineyards are those with the highest yields. Sauvignon Blanc as a variety naturally produces the highest yields, resulting in the vineyards with the higher percentage of Sauvignon Blanc by area tending to be the most profitable.

The higher prices per tonne being paid for lower yield and higher quality are not compensating the growers compared with producing a higher yield at a lower price. The average price of the upper quartile for the past four seasons is $1,850 per tonne compared with $2,080 per tonne for the lower quartile, whereas the cash operating surplus is $22,870 compared with $6,710 per hectare.

The vineyard expenses of the lower quartile vineyards are higher at $13,080 compared with $9,780 per hectare for the higher quartile reflecting the larger area of other varieties such as Pinot Noir, which require more labour inputs on average. Increased crop moderation costs may be required to achieve lower yield caps in prolific years.

Vineyard expense differences between upper and lower quartiles have a much smaller influence on profitability compared with yield.

Table 2. Marlborough vineyard quartile profitability trends

	2016	2017	2018	2019	Average
Upper Quartile – % area Sauvignon Blanc	91%	92%	91%	95%	**92%**
Lower Quartile – % area Sauvignon Blanc	77%	79%	76%	71%	**76%**
Upper Quartile – Average yield	18.8	17.4	16.3	16.3	**17.2**
Lower Quartile – Average yield	11.1	10.8	8.5	9.2	**9.9**
Upper Quartile – Price $/T	1,855	1,820	1,865	1,865	**1,850**
Lower Quartile – Price $/T	2,195	1,890	2,110	2,125	**2,080**
Upper Quartile – Net cash income ($/ha)	37,440	32,570	30,390	30,220	**32,660**
Lower Quartile – Net cash income ($/ha)	22,900	19,500	17,710	19,020	**19,780**
Upper Quartile – Vineyard working expenses ($/ha)	8,750	9,370	9,850	11,160	**9,780**
Lower Quartile – Vineyard working expenses ($/ha)	12,740	12,300	13,240	14,020	**13,080**
Upper Quartile – Cash operating surplus ($/ha)	28,680	23,200	20,530	19,060	**22,870**
Lower Quartile – Cash operating surplus ($/ha)	10,160	7,200	4,480	5,000	**6,710**
Upper Quartile – EBIT/ Total Capital	10.8%	7.4%	7.2%	5.9%	**7.8%**
Lower Quartile – EBIT/ Total Capital	3.7%	1.9%	0.6%	0.8%	**1.7%**

Expected Financial Performance of the Marlborough Viticulture Model in 2020

Growers have budgeted for a model average of 13.2 tonnes per hectare in 2020, which is a 6 percent increase compared with 2019 and slightly below the average for 2014-18 of 13.4 tonnes per hectare. All the varieties are forecast to have an increased yield. Pinot Noir, Pinot Gris, and Chardonnay are budgeted to return to average production, with increases of between 18 and 30 percent compared with 2019. The Sauvignon Blanc budget at 14.5 tonnes per hectare is close to the average of the 2015-19 model yield of 14.4 tonnes per hectare.

The model forecast price for the average of all varieties is $1,975 per tonne and Sauvignon Blanc $1,885 per tonne. Growers in the group are wanting an improvement in price to combat rising costs and have budgeted cautiously for a 2 percent increase in grape prices in 2020.

New Zealand Winegrowers report that with a national crop of 413,000 tonnes in 2019 compared with the pre-vintage survey expectation of 455,000 tonnes, there is likely to be more supply/demand tension in the marketplace, with this being the third vintage in a row below expectations.

Industry Issues and Developments

Seasonal Impacts on Profitability

The majority of the 50 growers in the survey group reported a negative effect on their vineyard yields due to the cloudy and wet conditions during flowering. Pinot Noir and Chardonnay were specifically mentioned as being most affected. Although bunch numbers were good after excellent initiation conditions in early summer 2017, the poor flowering conditions in 2018 significantly reduced berry numbers due to poor pollination and fruit set.

Half the respondents also reported a reduction in yield due to the hot and dry conditions in January and February leading to lower berry weights. This particularly affected four growers in the model who had no alternative source of water, when restrictions to the Southern Valleys Irrigation Scheme and the Wairau River were imposed for over five weeks in February, during dry weather.

They had to purchase and cart in water to the vineyard just to supply survival rations. In a few severe cases of water shortage, significant defoliation occurred prior to harvest, reducing quality as well as yield.

Growers with adequate water supply felt that the dry summer was a benefit as ripening was earlier, disease pressure reduced, and the weather helped moderate canopy growth for vineyards that have had issues with excessive growth in the previous two seasons.

The earlier and controlled harvest was positive for the industry as a whole and a relief after two difficult, wet vintages.

Growers also reported a rapid increase in the spread of mealy bug in 2019 and the potential negative effects on vineyard life due to trunk disease is being highlighted.

Grower Morale and Business Viability

Morale has improved in the group after a significant drop after vintage 2018. Two thirds of the respondents said they felt positive about their business, back up from only half in 2018. The driver of this change is predominantly due to the relief of a good, controlled vintage after the two wet and difficult previous harvests.

However, a large proportion of the group raised the fact that rising costs with static prices is reducing business profitability and is a significant concern.

There is a continued interest amongst some grape growers to either lease or sell their vineyards. In some cases, this is due to retirement and in others a business decision, as they see profitability eroding. Three of the model group were contemplating or have already planned for this option.

The majority of the contract growers in the group continue to report positive relationships with their buyer wineries.

Growers were concerned about various risks impacting, or potentially impacting on their business including:

- rising costs and static prices eroding profitability were the major concern for many of the group. Labour costs rising, strongly influenced by the increases in the minimum wage, were identified as the main driver behind increased costs overall;
- climatic risks such as the cool, cloudy weather at flowering leading to poor pollination this past season, frost and further weather extremes induced by climate change, such as the excessive rain received from Cyclone Gita in February 2018;
- increasing incidence and severity of pests and diseases already present, such as powdery mildew, mealy bug and trunk disease. At a recent NZW grape days meeting in Blenheim, the risk of trunk disease reducing vineyard life and profitability was emphasised.
- biosecurity incursions from foreign pests such as the Brown Marmorated Stink Bug or Glassy Winged Sharpshooter, as well as an increase in potential pests already unable to be excluded, such as the Harlequin Ladybird, which has recently been discovered in all the main viticulture areas;
- a portion of growers in the group expressed concern about commoditisation of Sauvignon Blanc, with high volume and low prices in the marketplace leading to the erosion of 'Brand Marlborough'. These growers are strongly opposed to the current allowance to blend up to 15 percent of out-of-region wine, and perceived lack of control of bulk wine overseas. A direct result of these concerns has been the recent formation of 'Appellation Marlborough Wine' to offer wine made from 100 percent Marlborough grapes, bottled in New Zealand and grown to specific soil and location cropping limits;
- water security in the future after the drought in the past summer. Many growers and Wine Marlborough engaged with Marlborough District Council's Proposed Marlborough Environment Plan regarding water use and allocation through submissions and at the hearings in February 2019. The hearings panel is currently in the deliberation process. Wine Marlborough is encouraging the formation of more local water user groups to be formed to ensure further engagement with the Council.

New Zealand Winegrowers is currently warning growers of the potential to lose the use of certain agrichemicals on wine grapes, with a list of active ingredients currently being reviewed in Europe. The recent ban on the use of Iprodione by the European Union (EU) sets a precedent that chemicals currently allowed in New Zealand could be ineligible for export to the EU. Breeding disease resistance into existing and future varieties is a potential solution to a reduction in the chemical armoury.

Environmental and Natural Resource Management

After the most significant period of drought in many years, the model group of growers were asked questions around water supply and climate change:

A quarter of the growers in the group said they did not have an adequate water supply in the 2019 summer and that it had a negative effect on berry weights, and in some cases, fruit quality. Four growers had to purchase and cart in water to supply 'survival rations' to their vines.

A third of the group are considering alternative sources such as storage dams. The rest either already have back up supply or believe that their current water resource will continue to be adequate.

More than half the group have considered the possible effects of climate change on their business and have considered or implemented a number of mitigating actions:

- securing water supply, with a storage dam or other additional water source;
- soil moisture monitoring, for efficient water use and build vine resilience by not over watering;
- good canopy management, to reduce disease pressure by keeping an open canopy in the event of excessive rain.

Growers acknowledged the risks around waste management. Incorrect disposal of treated posts or poor storage and use of grape marc can result in significant negative publicity for the industry.

Many in the group are recycling waste where appropriate and minimising chemical use where possible. There are a number of conventional growers utilising organic growing practices, such as an under-vine sward to replace herbicide use.

Labour

Nearly all the growers in the model group use contractors to some degree. About a quarter have their own employed staff (other than management) as well.

Most wine industry employers are experiencing a chronic shortage of skilled machinery operators, mechanics, managers, supervisory and other permanent staff. Efforts to bring people in from other regions has been difficult, due to the cost and availability of housing. It is hoped that recent housing developments specifically for RSE workers will release a few more rental properties into the market.

Some employers are looking at more flexible employment arrangements to attract older people into the industry or employing school leavers and training them up from scratch.

A few growers are experiencing contractor labour shortages but most stated that by building ongoing relationships with contractors, they are not having too many issues, although the labour market is tight.

The model group is unanimous in stressing the importance of the 'Recognised Seasonal Employer' (RSE) Scheme to the viticulture industry and that it is very important to look after the workers who come on the scheme, so that they return regularly. Returning workers have a better understanding of the work and the quality required. The group is also concerned around any future changes to immigration policy that could reduce the numbers of RSE worker visas.

Labour (cont.)

Three quarters of the group said that increases in the minimum wage were increasing their working expenses and about a third felt that other wages also are increasing in line with the minimum wage. However, many were supportive of the wage rises but are hoping for future increases in price to compensate.

Increases in manual labour costs are encouraging growers to re-consider existing mechanisation such as machine stripping and stimulating interest in further mechanisation development.

Hot Topics

After the summer drought in 2019 many growers are concerned about water security and also future water allocation in Marlborough, once the Proposed Marlborough Environment Plan rules around water allocation and use are finalised. One manager stated that we are near to 'peak water allocation', which could restrict potential future development.

Biosecurity incursions from overseas pests and diseases were one of the main concerns raised, and specifically the Brown Marmorated Stink Bug and Glassy Winged Sharpshooter. There are also concerns about a pest such as the Harlequin Ladybird that has already spread throughout most viticulture areas and so, is already unable to be excluded.

Large companies becoming more dominant with recent large developments, acquisitions and leases. Some growers are concerned about the effect on markets and prices of the volume still coming on stream. They are also concerned that small and medium sized wineries may get squeezed out of the marketplace.

There is an established concern amongst one sector of the group around the erosion of 'Brand Marlborough' who disagree that up to 15 percent of out-of-region wine can still be blended in and labelled as Marlborough wine. In addition, they perceive that large volumes of low-price wine, often shipped in bulk overseas, is causing commoditisation of Marlborough Sauvignon Blanc and threatening the premium position in the market.

Increasing costs, including labour, compliance and health and safety.

Awareness that the recent media attention on farming environmental practices may well move its spotlight more on to viticulture, and that growers need to be proactive in ensuring that they are following best practice, particularly around maintaining water quality in local waterways and the handling of grape marc.

BREXIT continues to be an unknown risk for exports to the United Kingdom.

MARLBOROUGH 2019 WHOLE VINEYARD BENCHMARKING REPORT

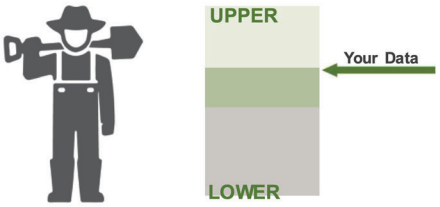
Ministry for Primary Industries
Manatū Ahu Matua

NEW ZEALAND WINE
PURE DISCOVERY

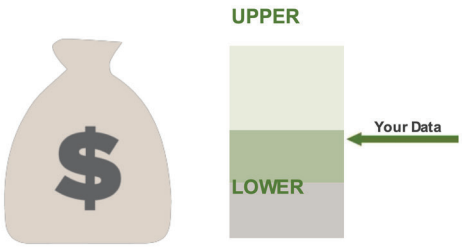
Includes allowance for unpaid labour			
$ per producing ha	**Your data**	**Average**	**10-20ha**
Unpaid FTE - number	1	0.4	0.5
Income from grapes ($/ha)	$27,705	$24,492	$27,441
Average yield (T/ha)	13.9	12.6	14.4
Average Return ($/T)	$1,992	$1,937	$1,920
Labour expenses			
Pruning (Total)	$3,113	$2,708	$3,425
Canopy and Crop mgt	$2,805	$1,840	$2,133
Weed and Pest Control	$464	$882	$934
Other Wages	$1,639	$1,760	$1,940
Total labour expenses	$8,023	$7,214	$8,453
Total operating expenses	$15,044	$12,481	$14,269
Cash operating surplus	$12,693	$12,114	$13,176

Income from grapes $/ha

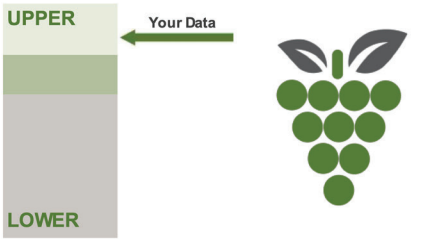
Labour Expenses $/ha



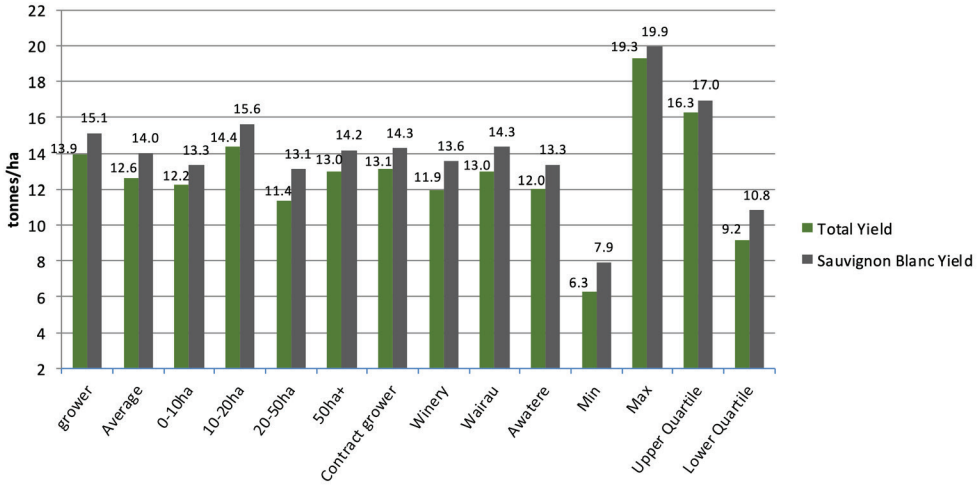
Cash operating surplus $/ha



Total operating expenses $/ha



Yield Analysis



Appendix/tables

Marlborough Weather Data

	Growing Degree Days[1] (GDD)			Rainfall (mm)		
Month	2018[2]	2019	Long Term Average	2018	2019	Long Term Average
June	6	12	19	18	39	68
July	4	16	10	62	72	62
August	39	21	19	66	60	56
September	64	55	57	50	36	46
October	121	118	105	32	34	62
November	154	152	146	16	63	46
December	270	233	217	22	54	47
January	333	331	256	80	4	43
February	244	248	226	181	8	39
March	219	236	199	54	95	38
April	115	99	111	52	80	56
May	63	90	61	85	55	56
Total	**1,627**	**1,599**	**1,405**	**701**	**559**	**552**

[1] GDD – growing degree days. GDDs are calculated by taking the average of the daily high and low temperatures each day compared with a baseline (10 degrees centigrade). They help to predict the date that a flower will bloom or a crop reach maturity.

[2] Year refers to year of harvest.

Source: NIWA (Blenheim)

Marlborough Vineyard Model Production and Income Details for 2019

Year ended 30 June	Area	Production per hectare (t/ha)	Total production (t)	Gross yield (%)	Brix (%)	Return ($/t)	Revenue ($)
Sauvignon Blanc	23.5	14.0	329	88%	21.2	1,855	610,000
Pinot Noir – Table	3	5.8	17	5%	22.8	3,410	59,400
Pinot Gris	1.5	8.8	13	4%	22.2	1,950	25,900
Chardonnay – Mendoza & Clone 15	1.5	6.9	10	3%	21.8	2,295	23,700
Chardonnay – all other clones	0.5	8.0	4	1%	22.3	2,040	8,200
Average	**30**	**12.5**	**374**	**100%**		**1,945**	**727,200**

Marlborough Vineyard Model Production and Income Details for 2020

Year ended 30 June	Area	Production per hectare (t/ha)	Total production (t)	Gross yield (%)	Brix (%)	Return ($/t)	Revenue ($)
Sauvignon Blanc	**23.5**	**14.5**	**341**	**86%**	**21.4**	**1,885**	**643,100**
Pinot Noir – Table	**3.0**	**6.9**	**21**	**5%**	**23.1**	**3,285**	**67,700**
Pinot Gris	**1.5**	**11.0**	**17**	**4%**	**22.0**	**1,960**	**32,500**
Chardonnay – Mendoza & Clone 15	**1.5**	**9.2**	**14**	**3%**	**22.3**	**2,275**	**31,500**
Chardonnay – all other clones	**0.5**	**10.5**	**5**	**1%**	**22.2**	**2,025**	**10,600**
Average	**30.0**	**13.2**	**397**	**100%**		**1,975**	**785,400**

Figures may not add to totals due to rounding. Table is sorted by variety with highest to lowest producing area.

Marlborough Vineyard Model Grape Prices

Year ended 30 June	2009-18 ($/t)	2014-18 ($/t)	2018 ($/t)	2019 ($/t)	2020 budget ($/t)
Sauvignon Blanc	1,745	1,680	1,825	1,855	1,885
Pinot Noir – Table	3,125	3,105	3,245	3,410	3,285
Pinot Gris	1,875	1,850	1,945	1,950	1,960
Chardonnay – Mendoza & Clone 15	2,225	2,045	2,375	2,295	2,275
Chardonnay – all other clones	1,925	1,810	1,840	2,040	2,025
Average	**1,840**	**1,780**	**1,930**	**1,945**	**1,980**

Marlborough Vineyard Model Grape Yields

Year ended 30 June	2009-18 (t/ha)	2014-18 (t/ha)	2018 (t/ha)	2019 (t/ha)	2020 budget (t/ha)
Sauvignon Blanc	13.3	14.9	14.0	14.0	14.5
Pinot Noir – Table	6.3	6.8	6.7	5.8	6.9
Pinot Gris	9.7	11.4	11.6	8.8	11.0
Chardonnay – Mendoza & Clone 15	8.9	9.0	9.3	6.9	9.2
Chardonnay – all other clones	11.7	11.6	9.0	8.0	10.5
Average	**12.2**	**13.4**	**12.7**	**12.5**	**13.2**

Marlborough Vineyard Model Budget

	2019	2020
Total area	**33**	**33**
Planted area	**30**	**30**
Producing area	**30**	**30**
Total crop (tonne)	374	397
% change	-2%	6%
Average vines per planted hectare	**2,134**	**2,134**

Marlborough Vineyard Model Expenditure

Year ending 30 June	2018		2019			
Vineyard working expenses	Whole Vineyard ($)	**percent change 19 vs 18**	Whole Vineyard ($)	producing hectare ($)	per tonne gross ($)	per vine ($)
Hand harvesting	5,400	54%	8,300	277	22	0.13
Pruning (and tying down)	74,700	8%	80,400	2,680	215	1.26
Canopy/Crop management	50,600	5%	53,300	1,777	143	0.83
Other wages	56,600	6%	59,900	1,997	160	0.94
ACC – employees	800	0%	800	27	2	0.01
Total labour expenses	**188,100**	**8%**	**202,700**	**6,760**	**542**	**3.17**
Disease, Pest & Weed control	33,500	6%	35,400	1,180	95	0.55
Fertiliser & lime	10,800	25%	13,500	450	36	0.21
Electricity/Irrigation	5,400	28%	6,900	230	18	0.11
Vehicle	3,300	-3%	3,200	107	9	0.05
Fuel	5,900	41%	8,300	277	22	0.13
Repairs & maintenance	24,300	11%	27,000	900	72	0.42
General	4,400	20%	5,300	177	14	0.08
Frost protection	2,100	38%	2,900	97	8	0.05
Machine harvesting	21,600	7%	23,100	770	62	0.36
Total other working expenses	**111,300**	**13%**	**125,600**	**4,190**	**336**	**1.96**
Rates	7,500	19%	8,900	297	24	0.14
Water rates	2,600	4%	2,700	90	7	0.04
General insurance	4,400	0%	4,400	147	12	0.07
ACC – owners	4,100	-2%	4,000	133	11	0.06
Communication	1,500	-7%	1,400	47	4	0.02
Accountancy	4,800	-13%	4,200	140	11	0.07
Legal & consultancy	1,700	94%	3,300	110	9	0.05
Levies & subscriptions	5,300	13%	6,000	200	16	0.09
Other administration	2,700	44%	3,900	130	10	0.06
Total overhead expenses	**34,600**	**12%**	**38,800**	**1,290**	**104**	**0.61**
Total vineyard working expenses	**334,000**	**10%**	**367,100**	**12,240**	**982**	**5.74**
Wages of management	75,000	0%	75,000	2,500	201	1.17
Interest	50,700	-11%	45,000	1,500	120	0.70
Rent &/or leases	11,400	7%	12,200	405	33	0.19
Depreciation	43,300	4%	45,200	1,505	121	0.71
Other expenses	**180,400**	**-2%**	**177,400**	**5,910**	**475**	**2.77**
Total vineyard operating expenses	**514,400**	**6%**	**544,500**	**18,150**	**1,456**	**8.51**

Foot notes for following page

Figures may not add to totals due to rounding.

[1] Drawings refers to living expenses. Figures may not match with previous years due to the revision of interpretation of drawings.

[2] Vineyard surplus for reinvestment is the cash available from the vineyard business, after meeting living costs, which is available for investment on the vineyard or for principal repayments. It is calculated as the vineyard profit after tax less depreciation less drawings.

[3] Land and building asset value includes the value of owned land, vines and supports, other improvements, vineyard buildings and dwellings on the property as at 30 June.

Marlborough Vineyard Model Budget

Year ending 30 June	2018		2019			
Revenue	Whole vineyard ($)	**percent change 19 vs 18**	Whole vineyard ($)	per producing hectare ($)	per tonne gross ($)	per vine ($)
Income from grapes	736,800	-1%	727,200	24,240	1,945	11.36
Other direct vineyard income	3,900		3,300	110	9	0.05
Net cash income	**740,700**	**-1%**	**730,500**	**24,350**	**1,955**	**11.41**
Vineyard working expenses	**334,000**	**10%**	**367,100**	**12,235**	**982**	**5.74**
Cash operating surplus	**406,700**	**-11%**	**363,400**	**12,115**	**972**	**5.68**
Interest	50,700	-11%	45,000	1,500	120	0.70
Rent &/or leases	11,400	7%	12,200	405	33	0.19
Depreciation	43,300	4%	45,200	1,505	121	0.71
Net nonfruit cash income	0		0	0	0	0.00
Vineyard Profit Before Tax	**301,300**	**-13%**	**261,000**	**8,700**	**698**	**4.08**
Tax	**101,800**	**-16%**	**85,300**	**2,845**	**228**	**1.33**
Vineyard profit after tax	**199,500**	**-12%**	**175,700**	**5,860**	**470**	**2.74**
Allocation of funds						
Add back depreciation	43,300	4%	45,200	1,505	121	0.71
Drawings/living expenses[1]	70,100	-2%	68,700	2,290	184	1.07
Vineyard surplus for reinvestment[2]	172,700	-12%	152,200	5,075	407	2.38
Reinvestment						
Net capital purchases	30,000	22%	36,500	1,215	98	0.57
Development	13,500	20%	16,200	540	43	0.25
Principal repayments	60,300	-27%	44,300	1,475	118	0.69
Vineyard cash surplus/deficit	**68,900**	**-20%**	**55,200**	**1,845**	**148**	**0.86**
Other cash sources						
Indirect cash income	26,000	-13%	22,500	750	60	0.35
New borrowings	0		0	0	0	0.00
Introduced funds	0		0	0	0	0.00
Net cash position	**94,900**	**-18%**	**77,700**	**2,595**	**208**	**1.21**
Assets & liabilities						
Land and building[3]	6,654,000	0%	6,642,000	221,400	17,767	103.77
Plant and machinery	128,800	3%	133,000	4,435	356	2.08
Total vineyard assets (closing)	**6,782,800**	**0%**	**6,775,000**	**225,835**	**18,122**	**105.84**
Total vineyard liabilities (closing)	**931,700**	**-5%**	**887,400**	**29,580**	**2,374**	**13.86**
Total equity	**5,851,100**	**1%**	**5,887,600**	**196,255**	**15,749**	**91.98**
Liability percentage	14%		13%			
Equity percentage	86%		87%			

Calculated ratios

Year ending 30 June	2018	2019			
	Whole Vineyard	Whole Vineyard	per producing hectare ($)	per tonne gross ($)	per vine ($)
Economic Vineyard Surplus (EVS)[1]	288,400	243,200	8,110	651	3.80
Vineyard working expenditure/NCI[2]	45%	50%			
EVS/Total vineyard assets	4.3%	3.6%			
EVS less interest & lease/equity	3.9%	3.2%			
Interest+rent+lease/NCI	8.4%	7.8%			
EVS/NCI	38.9%	33.3%			
EBIT[3]	352,000	306,000			
EBIT/Total Capital	5.2%	4.5%			
EBIT/Total Equity	6.0%	5.2%			

Figures may not add up to totals due to rounding

[1] Economic Vineyard Surplus (EVS) is calculated as follows: Net cash income less vineyard working expenses less depreciation less wages of management (WOM)

WOM is calculated as $31 000 for labour input plus 1 percent of opening total vineyard assets to a maximum of $75 000

[2] Net cash income.

[3] Earnings before interest and tax.

Key parameters, financial results for the Marlborough vineyard model

Year ended 30 June	2009-18	2014-18	2018	2019
	10-year average	5-year average		
Producing area (ha)	30	30	30	30
Total production1 (t)	363	403	382	374
Average production (t/ha)	12.1	13.4	12.7	12.5
Average return ($/t)	1,695	1,842	1,930	1,945
Sauvignon Blanc return ($/t)	1,588	1,747	1,825	1,855
Net cash income ($)	623,850	749,260	740,700	730,500
Vineyard working expenses ($)	280,955	310,340	334,000	367,100
Vineyard profit before tax ($)	237,525	329,900	301,300	261,000
Vineyard surplus for reinvestment ($)	145,690	178,460	172,700	152,200
EBIT/Total Capital	**5.2%**	**6.7%**	**5.2%**	**4.5%**

If you have any questions relating to or for further information on the model please contact :

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