Vineyard Benchmarking Report

Marlborough 2020

NEW ZEALAND WINE
PURE DISCOVERY

Ministry for Primary Industries
Manatū Ahu Matua

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Vineyard Benchmarking Report

Marlborough 2020

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 August meeting to validate the preliminary findings and the Bragato Research Institute for providing the venue.

In collaboration with

Ministry for Primary Industries
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Cover image: Sileni Estate, Marlborough

Marlborough Model - 2020 Viticulture Benchmarking
Key Performance Indicators

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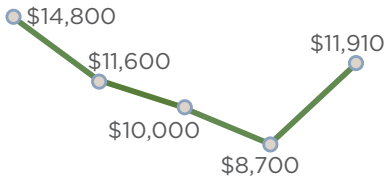
Profit Before Tax

$11,910 per hectare

↑37% to June 2020



Profit $ Per Ha
Last 5 years

Income
Per Hectare

$27,900 to June 2020

↑ 15%

Working Expenses
Per Hectare

$12,455 to June 2020

↑ 2%

EBIT / total capital[1], for the Model

5.5%

↑ 22%

[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

13.8 tonnes per hectare

↑ 10%

Production
Sauvignon Blanc Yield

14.9 tonnes per hectare

↑ 6%

Price
Sauvignon Blanc Price

$1,905 dollars per tonne

↑ 3%

Vintage 2021 Outlook
grape grower view as at June 2020

Growers are cautiously optimistic regarding the year ahead with growers forecasting a slightly lower crop on the outturn achieved in 2020. The COVID-19 pandemic has created significant uncertainty in growers forecasts and while most were budgeting similar prices to 2020 many were hoping for an increase to reflect increasing 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 2020 data was sourced from 48 vineyards. Twelve vineyards are located in the Awatere Valley and 36 vineyards in the Wairau Valley. There are 30 contract growers and 18 winery-operated vineyards in the survey group. Ten of the vineyards are 0-10 hectares, 8 are 10-20 hectares, 15 are 20-50 hectares and 15 are 50 hectares or larger. Sauvignon Blanc is the dominant grape variety in the model representing 80 percent of the producing area, followed by Pinot Noir, Chardonnay, and Pinot Gris. Five vineyards are Bio-Gro certified.

Key points

- The 2019/20 season was a good one for Marlborough grape growers despite the outbreak of COVID-19. The pandemic moved to Level Four on New Zealand's alert system on 25 March 2020, which coincided with harvest. Fortunately for the wine industry, Marlborough and New Zealand, the vintage was categorised as an essential business and was able to continue. While this did put extreme pressure on the whole process, excellent weather conditions helped considerably, and the grower group reported that all their grapes were harvested in good condition. Wineries and some growers had many lockdown logistical and staffing issues to contend with, but these were negotiated successfully.
- **The 2020 vineyard model profit before tax was up 37 percent to $11,910 per hectare compared with 2019 and up 16 percent compared with the average of 2015-19. Higher yields were the main reason for the improved profit due to favourable climatic conditions through flowering and in the lead up to harvest.**
- Model yield at 13.8 tonnes per hectare increased 10 percent compared with 2019 and up 6 percent compared with the 2015-19 average. Sauvignon Blanc yield was 14.9 tonnes per hectare, 6 percent higher than in 2019 and 4 percent higher than the 2015-19 average.
- **The earlier flowering varieties Pinot Noir, Pinot Gris and Chardonnay rebounded after a poor year in 2019, up between 30 and 80 percent in comparison with 2019 due to greatly improved weather conditions for flowering and pollination.**
- Model average wine grape prices were up 4 percent over 2019 at $2,020 per tonne, with Sauvignon Blanc up 3 percent at $1,905 per tonne. The 2020 Sauvignon Blanc average price is 6 percent higher than the 2015-19 average. Prices edged higher due to increased sales and high demand for grapes.
- **Net cash income increased 15 percent to $27,900 per hectare compared with 2019 and 13 percent compared with the 2015-19 average.**
- 2019/20 was similar climatically to the previous year, with some notable exceptions. Similarities were regular rainfall events up to Christmas, followed by a very dry period January through April. Whilst the 2020 summer was drier than 2019, it was cooler and with better river flows, leading to significantly less water restrictions.
- **The combination of the very dry weather right through harvest and low disease pressure, coupled with adequate irrigation for most vineyards, led to good yields of excellent quality fruit. Winemakers were extremely pleased with the quality of fruit received.**
- Vineyard model working expenses at $12,455 per hectare were up 2 percent over 2019 and 15 percent higher than the average of 2015-19. The large increase in vineyard working expenses over the past five years has been mainly driven by increased wage rates. The minimum wage increased 20 percent between 2015 and 2019 and growers generally report all other wage rates have increased by a similar extent. Pest and disease control costs have also been increasing although fungicide inputs were able to be reduced in 2019/20 due to the very favourable, dry weather conditions.

- **Marlborough growers continued to invest in capital items during the season including dams, tractors, machinery and utility vehicles. Some of the machinery purchased is specifically to reduce labour expenses such as three-row sprayers, mechanical pruners and vine strippers.**
- Vineyard development continues in Marlborough with New Zealand Winegrowers vineyard register recording an additional 1,500 hectares coming into production over the past two years with Sauvignon Blanc being the main variety planted. Nurseries report that 1.7 million vines were planted in the 2019/20 season in Marlborough, approximately 750 – 800 hectares, a mix of new plantings and re-development of existing vineyards.
- **COVID-19 has had a significant influence on morale amongst the participant survey growers. Half the group reported feeling very uncertain about their businesses due to the pandemic's potential effect on the wine supply-demand balance, labour availability and expenses. Most of the rest were more positive, and with a good result in 2020 they still perceive a good future.**

Information about the model

The Marlborough vineyard model provides an indication of the production and financial performance of vineyards in the main growing region of Marlborough using the region's variety mix. The model does not reflect single variety vineyards. The model is based on an owner operator business structure.

The model parameters of vineyard size and variety mix are guided by regional statistics from New Zealand Winegrowers Biosecurity Vineyard Register.

Production, income and expenditure information is collected from a monitored panel of contributing vineyards, representing a cross-section of vineyards in Marlborough.

The Marlborough model remains at 30 producing hectares and for 2020, data was sourced from 48 vineyards. Twelve vineyards are in the Awatere Valley and 36 vineyards in the Wairau Valley. There are 30 contract growers and 18 winery-operated vineyards in the survey group. Ten of the vineyards are 0-10 hectares, 8 are 10-20 hectares, 15 are 20-50 hectares and 15 are 50 hectares or larger. Sauvignon Blanc is the dominant grape variety in the model representing 80 percent of the producing area, followed by Pinot Noir, Chardonnay, and Pinot Gris. Five vineyards are Bio-Gro certified.

Data from the contributing properties are averaged, adjusted as necessary and used to create the vineyard model.

Income figures include income from grapes and other direct vineyard income.

Expenditure figures include labour, vineyard working and overhead expenses. Labour expenses include management but exclude any allowance for unpaid labour, which in 2020 was equivalent to 0.3 Full Time Equivalents.

The vineyard model uses a 30 June balance date.

The vineyard model was modified substantially in 2013 following a review of the MPI viticulture monitoring programme. Hence direct comparisons with models from prior years is not recommended.

Key Parameters and Financial Results for the Marlborough Vineyard Model

Year ended 30 June	2010-19	2015-19	2019	2020
	10-year average	5-year average		
Producing area (ha)	30	30	30	30
Total production[1] (t)	369	390	374	413
Average production (t/ha)	12.3	13.0	12.5	13.8
Average return ($/t)	1,710	1,885	1,945	2,020
Sauvignon Blanc return ($/t)	1,605	1,790	1,855	1,905
Net cash income ($)	641,900	742,700	730,500	837,000
Vineyard working expenses ($)	287,400	325,900	367,100	373,700
Vineyard profit before tax ($)	252,400	308,300	261,000	357,200
Vineyard surplus for reinvestment[2]($)	152,100	171,100	152,200	272,300
EBIT/Total Capital	5.5%	6.0%	4.5%	5.5%

Notes:

The vineyard model is based on an owner-operator business structure and from 2014, the model is derived from data collected from both contract and winery growers.

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

[1] Grapes are harvested in the autumn, so the 2020 year refers to fruit harvested in autumn 2020.

[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 Vineyard Profit Drivers

	2020	2021 budget	Comment
Weather	Warm November, regular rainfall events until late December. Drought January to April.	Typical	Second warmest November on record (1932-2019) brought flowering forward and helped improve pollination of early varieties and sites. A significant rainfall event of 58mm contributed to the December rainfall being 190 percent of long-term average (LTA) and ensured good soil moisture into January 2020. Despite the higher rainfall, sunshine hours were much higher compared with December 2018 also improving fruit set. Zero rainfall in January 2020 followed by only 20mm by end of March meant Marlborough was in a drought by harvest. River flows were just enough to allow minimal consent shut offs. Most growers had an adequate irrigation water supply in 2020.
Yields	↑	Average	2020 model yield increased 10 percent compared with 2019 and 6 percent compared with the 2015-19 average. Sauvignon Blanc yield was up 4 percent compared with the 2015-19 average. In 2021 a 3 percent decrease in yield is budgeted close to the model average yield of the past 5 years.
Prices	↑	→	The model average grape price at $2,020 per tonne rose 4 percent compared with 2019 and Sauvignon Blanc was up 3 percent at $1,905 per tonne. Growers are budgeting for similar grape prices in 2021.
Expenditure	↑	↑	A 2 percent increase compared with 2019 but vineyard working expenses have risen from $10,445 per hectare in 2016 to $12,455 in 2020 (19%), a large part of which is due to increased wage rates. Growers are utilising increased mechanisation to reduce labour input. Lower disease pressure in 2020 helped contain the overall increase in expenses. Expenses are forecast to continue to increase in 2021 largely due to the increasing minimum wage.
Profit before tax	↑	↓	$11,910 per hectare, 37 percent up compared with 2019 and 16 percent up compared with the 2015-19 average. Lower forecast yield would decrease profit in 2020/21.
Morale	→		The 2020 vintage was a profitable one for most growers in the model group but there is significant uncertainty and concern for the future due to the current COVID-19 pandemic.

Financial Performance of the Marlborough Viticulture Model in 2020

Weather

	Growing degree days[1] (GDD)			Rainfall (mm)		
Month	2019[2]	2020	Long Term Average[3]	2019[2]	2020	Long Term Average
October	118	95	104	34	28	61
November	152	202	148	63	43	46
December	233	208	216	54	91	48
January	331	241	256	4	0	41
February	248	267	227	8	9	37
March	236	171	198	95	11	37
April	99	119	111	80	24	55
Total	**1417**	**1304**	**1261**	**337**	**206**	**325**

[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 2020.

2019/20 was similar climatically to 2018/19 with some notable differences. Once again there were regular rainfall events October through December, followed by a very dry second half of summer. In 2020 the January to April rainfall was only 44 mm compared with 187 mm for the same period in 2019. Temperatures were significantly lower in January and March 2020 compared with 2019 when January recorded around two degrees and March one degree above Long Term Average (LTA)[1]. Growing Degree Days (GDD) were still slightly above average but vines were less stressed than during the very hot summer of 2019. Lower stress conditions reduced demand for water and helped maintain better berry condition reducing incidence of shrivel and sunburn in 2020.

The long dry periods during the summer of 2020 significantly reduced disease pressure, in particular that of botrytis fungal fruit rot.

November 2019 was the second warmest on record (1932-2019) recording a mean air

temperature of 16.7 degrees Celsius, two degrees above LTA[1]. The high temperatures brought flowering forward and the settled weather ensured significantly improved pollination conditions compared with spring 2018, particularly on early flowering varieties such as Pinot Noir and Chardonnay and early flowering Sauvignon Blanc blocks. These conditions led to excellent fruit set and are the reason for the greatly improved yields of the early flowering varieties compared with 2019.

Rainfall of 134mm in November and December combined, was 143 percent of the Blenheim LTA of 94mm, and compared with 117mm in 2018. Although a higher volume there were fewer, larger rain events and more sunshine hours. There were 546 sunshine hours in November-December 2019 compared with 432 in the same period in 2018[1] which benefited pollination with more sunny days during the flowering period. The higher sunshine hours were a significant contributor to the generally excellent fruit set.

There was a significant rain event of 58 mm (Blenheim) between 15 and 20 December 2019, contributing to a monthly total of 91mm, 37mm higher than December 2018.

No more rain fell until 17 February 2020. The rest of February and all of March received an additional 20mm rain, resulting in a total of only 44mm for the period January-April 2020. This was the third lowest rainfall for that period for the past 91 years (1930-2020)[1]. By harvest Marlborough was in the grip of a drought[2] with regional Drought Committee meetings commencing in mid-March. Fortunately for growers the Wairau River A class water consents were only shut off for seven days over three occasions, compared with 35 days in summer 2019[1]. Despite the extreme dry most vineyards had an adequate irrigation water supply.

There were nine ground frosts, but no air frosts recorded in September-October 2019[1]. Five of the participant growers indicated their yields were reduced to some extent due to frost damage. There were also two ground frost events in April which affected a small number of vineyards.

The 2019/20 season was almost perfect climatically to produce high quality grapes. With low disease incidence and good weather through harvest, winemakers were extremely happy with the quality of the fruit received into the winery.

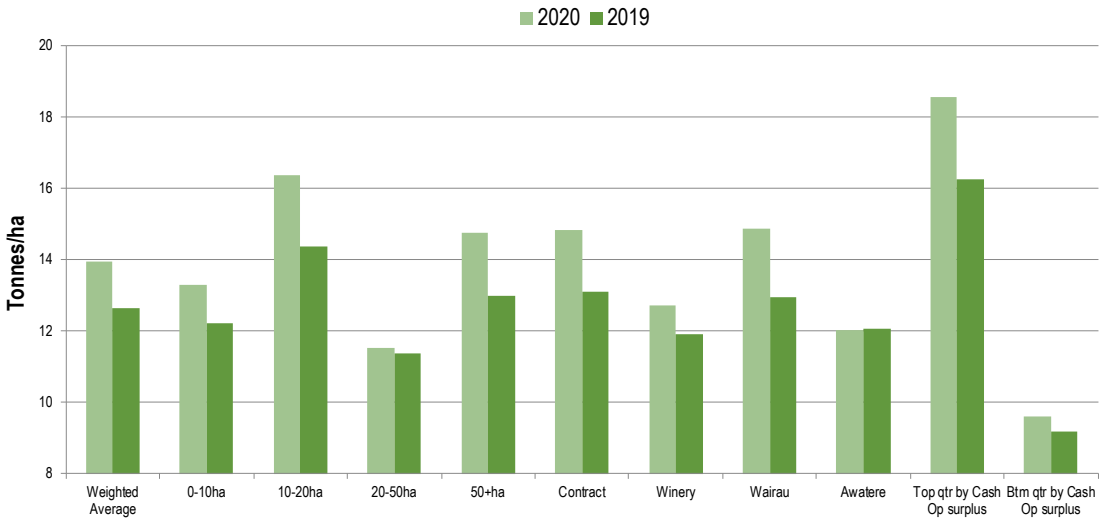
[1] Rob Agnew, Plant and Food Research, Marlborough Research Centre, Met Report, Winepress issues December 2019, February, March and April 2020

[2] National Institute of Water and Atmospheric Research (NIWA) drought index – Drought in North Marlborough and Severe Drought in South Marlborough

Yields

The vineyard model average yield was 13.8 tonnes per hectare, 10 percent up compared with 2019 and up 6 percent compared with the 2015-19 average. Figure 1 shows the average yield for all varieties compared to 2019, along with groupings for vineyard size, business type, sub region and by top and bottom quartile based on cash operating surplus. The variety mix has a big influence on yield differences between the categories.

Figure 1. Average Yield - All Varieties

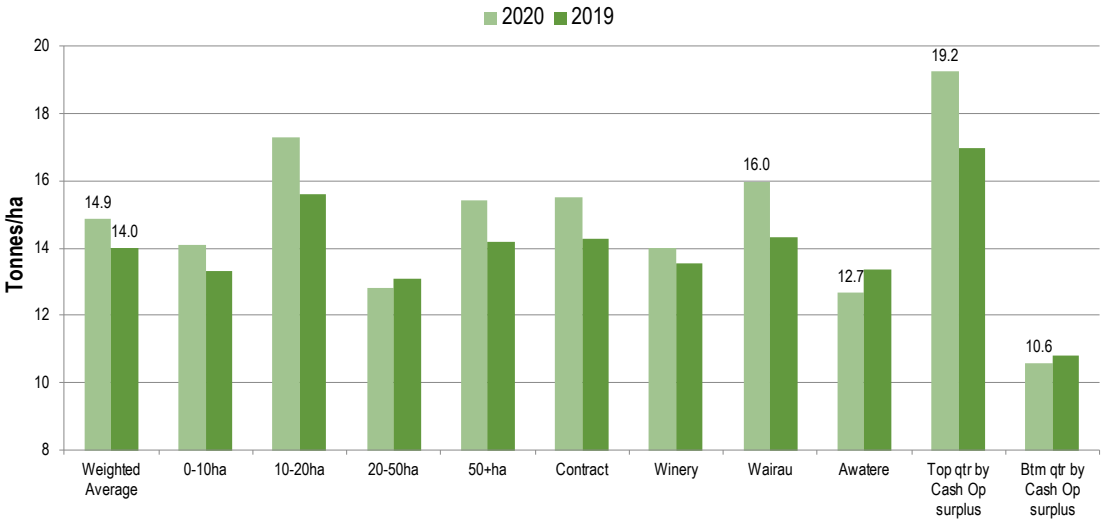


Sauvignon Blanc yield of 14.9 tonnes per hectare is 6 percent up compared with 2019, 4 percent up with the 2015-19 average and 10 percent higher than the average of the previous 10 years, showing a consistent increase in average yields in recent years. In part this is due to higher yield limits (caps) being put in place by wineries since 2013. Growers report that winery yield caps have remained at higher levels as wine companies have sought to secure supply to meet market demand.

Figure 2 shows the average yield for Sauvignon Blanc compared to 2019, along with groupings for vineyard size, business type, sub region and by top and bottom quartile based on cash operating surplus.

Sauvignon Blanc yields ranged from 8 to 23 tonnes per producing hectare in the 2020 survey group. Eight of the 48 participant vineyards produced less than 11 tonnes per hectare of Sauvignon Blanc. While average group yields were excellent, these lower crops represent the vineyards that suffered poorer pollination, frost damage or inadequate irrigation.

Figure 2. Average Yield Sauvignon Blanc



Early flowering varieties rebounded from poor yields in 2019. Pinot Noir table wine model yield at 7.7 tonnes per hectare was up 33 percent compared with 2019 and 16 percent compared with the 2015-19 average. Pinot Gris yielded 13 tonnes per hectare compared with the 2015-19 average of 10.8 tonnes and Chardonnay clones Fifteen and Mendoza 8.9 tonnes per hectare compared with 6.9 tonnes in 2019, but exactly the same as the 5-year average.

The Wairau Valley vineyard participants enjoyed a yield increase of 14 percent compared with 2019 across all varieties and a 12 percent increase for Sauvignon Blanc. The Awatere Valley vineyards yielded 12 tonnes per hectare across all varieties, the same as 2019, while the Sauvignon Blanc yield decreased by 4 percent compared with 2019. This was the opposite of 2019 when the Wairau vineyards were 6 percent down compared with 2018 and the Awatere vineyards 6 percent up. The Wairau grower group have a higher proportion of early flowering sites which coincided with better pollination conditions and did not suffer the same water restrictions and subsequent loss of yield that they did in 2019. The Wairau had a significantly better yielding year compared to 2019 whereas the Awatere had a similar yield.

In 2020 only three Sauvignon Blanc growers in the survey panel received discounted prices for fruit sold in excess of yield caps. Other growers reported cases where the receiving winery was happy to accept additional volume to meet demand.

Quality

Winemakers across the region have been extremely happy with the quality of vintage 2020 fruit and expect some excellent wines to be made across all varieties. An ideal season climatically, with low disease pressure, dry and settled weather right through harvest and an adequate water supply for most growers combined to produce great quality at harvest time. Some wineries reported that without the pressure of COVID-19 they may have delayed harvest on some blocks but could not take the risk in the circumstances.

No penalties for poor quality were reported by any of the grower group. The participant vineyards harvested all their producing area except one grower who abandoned 0.5 hectare of Pinot Noir due to severe powdery mildew infection.

Sauvignon Blanc average sugar levels were 21.2 Brix for the survey group, which was the same as 2019 and close to the long-term average.

The Awatere Valley growers in the group achieved an average Sauvignon Blanc Brix higher than the Wairau Valley growers, at 21.8 compared with 21.0 for the Wairau growers. This is the same trend as in 2019. High yields tend to limit sugar accumulation and the Wairau had significantly higher yields in the survey compared with the Awatere.

Prices

The model average grape price at $2,020 per tonne rose 4 percent over 2019 and was 7 percent up compared with the 2015-19 average.

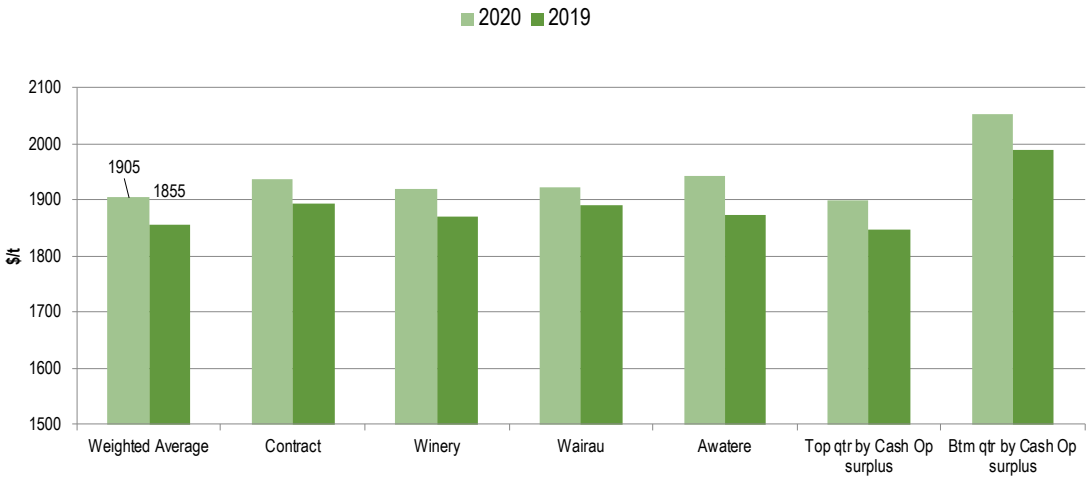
Sauvignon Blanc at $1,905 per tonne increased 3 percent, compared with 2019. Figure 3 shows the spread of Sauvignon Blanc prices by category.

Only 1 percent of Sauvignon Blanc harvested over winery yield limits was sold at a lower price, similar to 2019 and much reduced since the high of 5 percent in 2016. This reflects the high demand and relaxed yield caps in place for many wineries at the 2020 vintage.

Pinot Noir table prices at $3,380 per tonne were similar to 2019 and up 6 percent compared with the average of 2015-19.

Chardonnay grape prices tend to be variable depending on the clone and wine style the fruit is destined for. In 2020 there were excellent yields and quality of clones Fifteen and Mendoza being hand harvested for premium table wine. Within the survey group, this increased the average price for these clones by 16 percent to $2,670 per tonne compared with $2,300 per tonne in 2019 when poor yields in some blocks led to more fruit being machine harvested for standard wine sales.

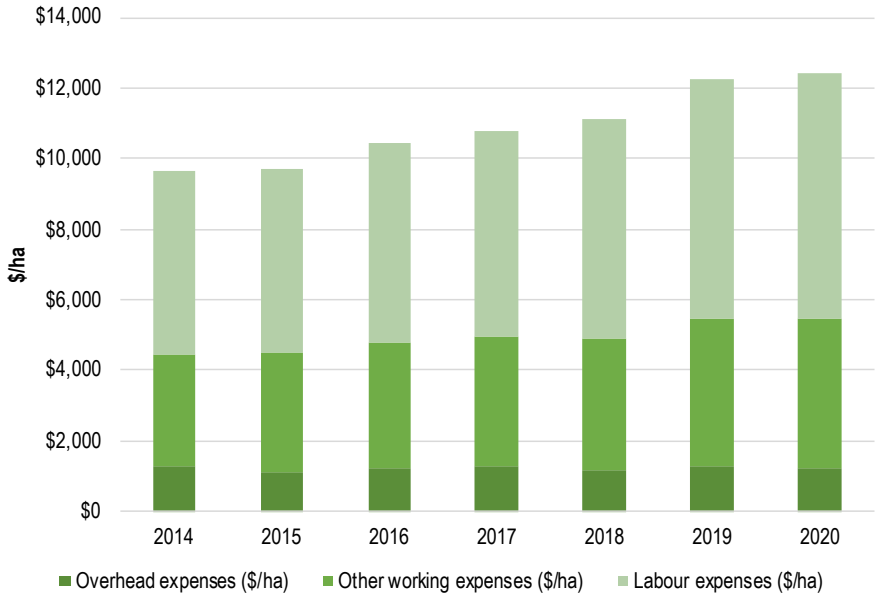
Figure 3. Income - Sauvignon Blanc $/tonne



Expenditure

Vineyard model working expenses increased 2 percent to $12,455 per hectare which is 15 percent higher than the average of 2015-19. This follows a sharp rise in 2019 of 10 percent over 2018 which was a big concern for the grower group. Figure 4 shows how the model working expenses have increased since 2014.

Figure 4. Vineyard working expenses $/ha



Vineyard model labour expenses in 2020 rose 3 percent above 2019 levels to $6,990 per hectare, a more moderate increase than in 2019 when labour expenses were up 8 percent compared with 2018. There was a minimum wage increase of 7.3 percent in April 2019 following on from 4.8 percent increase in April 2018. These increases, coupled with increasing wage rates across the industry due to growers paying more to attract and retain workers, are the main driver of increased labour expenditure. In 2020 the following labour expenses had the biggest influence on the labour category;

- pruning increased 4 percent, directly influenced by increased wage rates, but lower than the minimum wage percentage increase. More growers are utilising mechanisation to reduce labour inputs and in particular machine 'pre-topping' to reduce manual stripping work has become widely used;
- hand harvesting expenses were down 30 percent in 2020 compared with 2019, due to a higher proportion of machine harvesting. In part the pressure of the pandemic encouraged the decision to machine harvest along with the impact of rising wage rates;
- canopy and crop management labour expenses were the same as 2019. Crop moderation requirements were low with lower bunch numbers and favourable yield caps. Growers are increasing the use of machine shaking for both crop moderation and disease control;
- other wages increased 10 percent compared with 2019, influenced in part by rising wages for permanent staff and increased contractor machine work rates. Growers and contractors report that the shortage of skilled machinery operators is leading to increased movement of these staff between companies in response to better pay offers. Utilising bird nets before harvest is more widespread with significantly increased labour costs compared to shooting or scaring birds.
- In 2020 several growers in the survey group redeveloped existing vineyard blocks due to trunk disease issues, utilising grafting or re-trunking with the associated young vine training costs also contributing to the increase in other wages. Eutypa and botryosphaeria dieback are major grapevine trunk diseases worldwide, causing significant yield and quality reduction. Caused by fungal species of the Diatrypaceae and Botryosphaeriaceae families, they infect vines through pruning wounds, colonise wood tissue, cause dieback of cordons, and eventually kill vines. They are becoming more prevalent in Marlborough as vineyards age.

The climate in 2020 was very favourable for fungal disease control, and crop protection chemical costs were 4 percent lower compared with 2019, mainly due to slightly reduced numbers of fungicide applications. This reverses the trend of the previous five years over which time chemical costs rose 38 percent due in a large part to increased powdery mildew and botrytis pressure requiring a more intensive and expensive programme. In recent seasons Mealybug infestations have become more prevalent and trunk disease control products are being widely used.

Fertiliser inputs were 6 percent up compared with 2019 and have been rising since 2015. 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 9 percent, compared with the 2018/19 season. Regular rainfall reduced irrigation requirements up until January 2020. The drought conditions January through April 2020 without the water restrictions of 2019 meant that growers were mostly able to keep irrigating. Total irrigation for the season was a modest 10 percent up compared with the LTA across all sites using Fruition Horticulture's soil moisture monitoring service. The high December rainfall was effective in reducing the seasonal requirement despite the post-Christmas drought.

The Southern Valley's Irrigation scheme and abstraction directly from the Wairau River was only shut down for seven days in total during February and March 2020, compared with 35 days in the same months 2019. None of the growers in the survey group had to cart in water compared with four who spent a substantial amount buying in water in 2019.

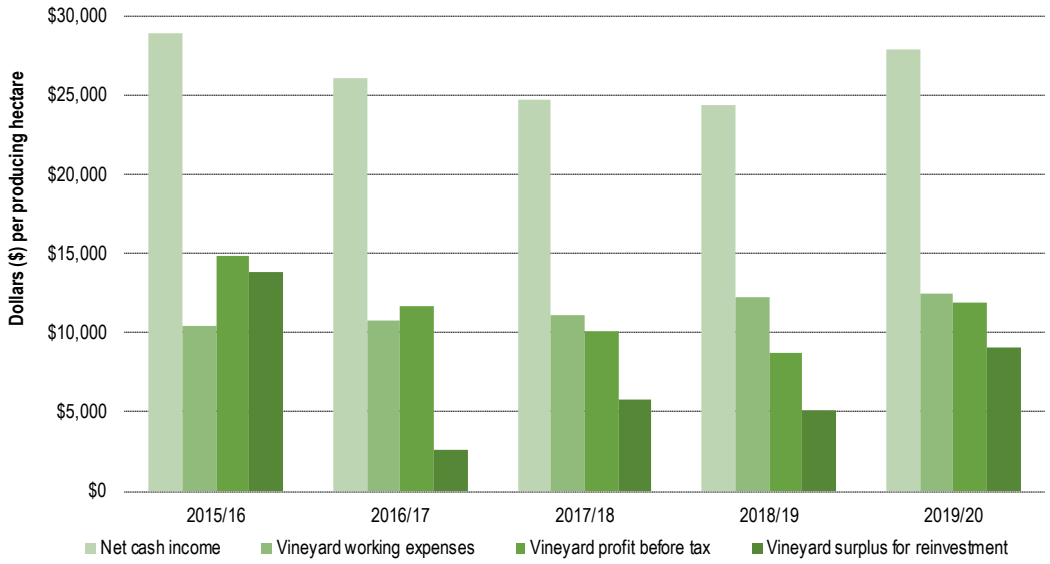
Fuel costs decreased by 11 percent compared with 2019 due in large part to the diesel fuel price being down 10 percent compared with 2019.

Levies and subscriptions increased by 20 percent compared with 2019, in the main due to the increased yield plus an increase in the New Zealand Winegrowers Grape Levy, up from 0.75 percent of grape income in 2019 to 0.825 percent in 2020.

Financial Result

Net cash income for the model at $27,900 per hectare was 15 percent up compared with 2019 and 13 percent up compared with the average of 2015-19. The higher income resulted in a 37 percent increase in vineyard profit before tax of $11,910 per hectare compared with $8,700 in 2019. Figure 5 shows the profitability trends over the past five seasons.

Figure 5. Marlborough vineyard model profitability trends



- The vineyard model has capital purchases of $46,400 ($1,545/ha). Nine surveyed growers reported capital purchases greater than $1,545 per hectare. Capital purchases in 2019/20 included items such as irrigation dams, tractors, various machinery and utility vehicles.
- Nine growers in the group invested in new development or redevelopment in 2019/20. Vineyard development continues in Marlborough, with several larger developments being undertaken by growers from outside of the survey group.
- Table 1, from New Zealand Winegrowers 2019-2022 Biosecurity Vineyard Register, shows producing hectares are still increasing in Marlborough. Sauvignon Blanc continues to be the predominant variety being planted and currently occupies 80 percent of Marlborough's vineyard area.

Table 1. Marlborough vineyard producing hectares

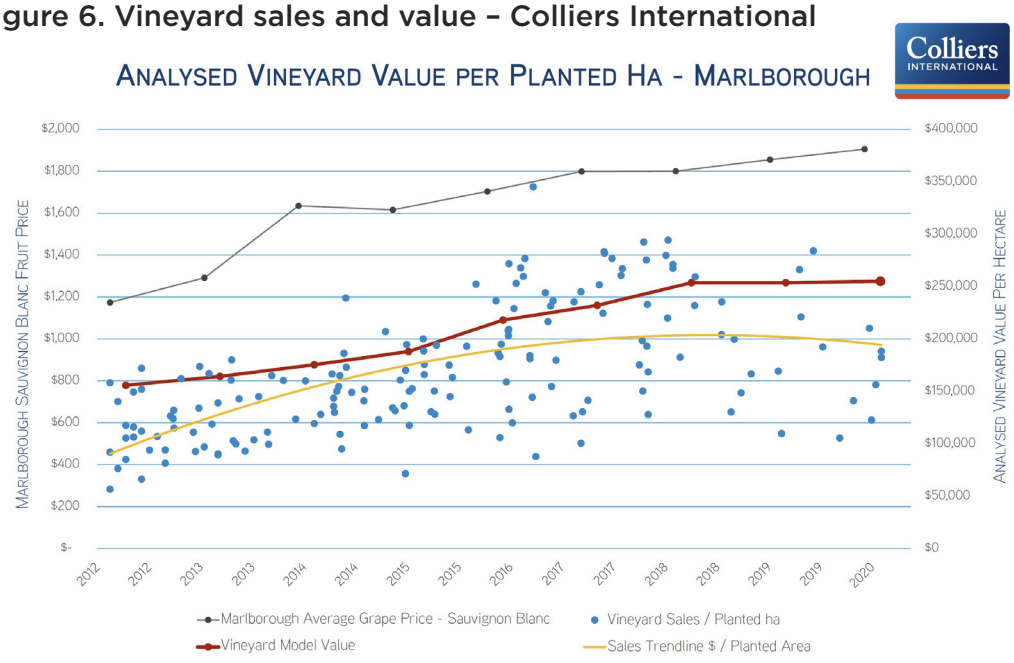
Producing ha	2019	2020	2021[1]
Marlborough - all varieties	27,102	27,808	28,226
Change year on year	814	706	418
Marlborough all varieties% change	3.1%	2.6%	1.5%
Marlborough Sauvignon Blanc	21,772	22,369	22,694
Change year on year	892	597	325
Marlborough Sauvignon Blanc % change	4.3%	2.7%	1.5%

[1] Growers estimated producing area.
Source: New Zealand Winegrowers 2019-2022 Biosecurity Vineyard Register Report.

Vineyard property values were perceived by the survey group to be $238,200 per planted hectare in 2020.

Tim Gifford of Colliers International produces an independent valuation of the model vineyard (see Figure 6) and currently assesses the value of the model vineyard, if it were located on the central Wairau plains, to be $258,700 per planted hectare. There are nine sales on the graph in the past six months with eight well below the central Wairau valuation but at the recent industry meeting it was explained that these recent sales were dominated by some large vineyards in the lower value, outer areas of the Awatere Valley.

Figure 6. 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 cash operating surplus, to identify the features of the higher and lower performing vineyards (Table 2).

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 grape price of the upper quartile for the past five seasons is $1,870 per tonne compared with $2,125 per tonne for the lower quartile, whereas the cash operating surplus is $23,200 compared with $6,800 per hectare, respectively.

The vineyard expenses of the lower quartile vineyards are higher at $13,400 compared with $10,200 per hectare for the higher quartile reflecting the larger area of varieties such as Pinot Noir, which on average require more labour inputs. Increased expenditure on crop moderation is usually 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 model quartile profitability trends

	2016	2017	2018	2019	2020	Average
Upper Quartile - % area Sauvignon Blanc	91%	92%	91%	95%	88%	**91%**
Lower Quartile - % area Sauvignon Blanc	77%	79%	76%	71%	67%	**74%**
Upper Quartile - Average yield	18.8	17.4	16.3	16.3	18.6	**17.5**
Lower Quartile - Average yield	11.1	10.8	8.5	9.2	9.6	**9.8**
Upper Quartile - Price $/T	1,855	1,820	1,865	1,865	1,950	**1,870**
Lower Quartile - Price $/T	2,195	1,890	2,110	2,125	2,295	**2,125**
Upper Quartile - Net cash income ($/ha)	37,440	32,570	30,390	30,220	36,110	**33,350**
Lower Quartile - Net cash income ($/ha)	22,900	19,500	17,710	19,020	21,810	**20,190**
Upper Quartile - Vineyard working expenses ($/ha)	8,750	9,370	9,850	11,160	11,650	**10,160**
Lower Quartile - Vineyard working expenses ($/ha)	12,740	12,300	13,240	14,020	14,670	**13,390**
Upper Quartile - Cash operating surplus ($/ha)	28,680	23,200	20,530	19,060	24,460	**23,190**
Lower Quartile - Cash operating surplus ($/ha)	10,160	7,200	4,480	5,000	7,140	**6,800**
Upper Quartile - EBIT/ Total Capital	10.8%	7.4%	7.2%	5.9%	7.9%	**7.9%**
Lower Quartile - EBIT/ Total Capital	3.7%	1.9%	0.6%	0.8%	2.1%	**1.8%**

Expected Financial Performance Of The Marlborough Viticulture Model In 2021

The grower group have budgeted for a model average yield of 13.4 tonnes per hectare in 2021 which is just below the average for 2016-20 of 13.6 tonnes per hectare, but above the 10-year average 2011-20 of 12.8 tonnes per hectare. For all the varieties the group has forecast yields close to the average of the past five seasons. This appears to be a prudent forecast as recent modelling of climatic factors during flower bud initiation carried out by Plant and Food Research predicts 2021 yield in the range 98-110% of long term average Sauvignon Blanc yield.

When surveyed in mid-2020, growers were budgeting for similar grape prices in 2021 as received in 2020 but recognise that it is an extremely uncertain time with the world still gripped by the COVID-19 pandemic. Many survey growers commented that they would like to see increases in grape prices to match continuing increases in expenses.

New Zealand Winegrowers has estimated the 2020 national vintage at 457,000 tonnes of which Marlborough contributed 78 percent. The national crop was up 11 percent, and Marlborough was up 12 percent compared with 2019.

Industry Issues and Developments

Seasonal Impacts on Profitability

The COVID-19 pandemic dominated responses to the industry issues and developments questionnaire. Growers reported feeling significant stress as the prospect of being unable to harvest loomed and great relief when the government confirmed vintage as an essential business. Once the harvest was given the go ahead, about half of the respondents stated that the pandemic had little direct influence on their season but were very grateful to the vintage crews and wineries for their amazing efforts during lockdown. The other half experienced some difficulties with staffing, harvest management and a higher level of stress during the harvest period. Growers involved in winery operations also had to deal with the difficulties presented by the COVID-19 lockdown during vintage (winemaking). For wineries this included arranging social distancing in the workplace, isolation of key staff away from their families and strict hygiene practices.

Two thirds of the survey group commented that the 2020 season had been favourable climatically and particularly leading up to and during harvest with warm, dry weather. The other third reported that either frost events or the summer drought had a negative impact on yields. This is reflected in the wide range of yields achieved by the survey group with Sauvignon Blanc ranging from eight to 23 tonnes per hectare.

Most of the participants who grow Chardonnay and Pinot Noir reported significantly improved pollination and subsequent yields of those varieties compared with 2019.

Two thirds of respondents mentioned the low disease pressure during the season, particularly from botrytis due to the dry conditions after veraison. Six respondents reported substantial powdery mildew

pressure and a couple had significant Mealybug incursions.

Six of the growers reported a reduction in yield due to the drought in Marlborough. They did not run out of water (although some came very close) but struggled to keep up with vine demand. In February-March 2019 Wairau River A Class water consents were shut off for a total of 35 days leading four participants to cart irrigation water into their vineyards. In 2020 there were only three short periods of shut off, totalling seven days and none of the participants carted in water.

Thirty three out of 48 growers in the group reported an increase in grape prices compared with 2019. Four specifically mentioned they welcomed a positive uplift in grape prices for vintage 2020 but three mentioned they were disappointed with a drop in their grape prices.

Grower Morale and Business Viability

COVID-19 has had a significant influence on morale. When asked the question 'how are you feeling about your business currently?', half of the respondents replied with 'cautious', 'uncertain' and 'nervous. Most of the rest were more positive, and with a good result in 2020 they still perceive a good future. Three growers responded negatively due to their specific circumstances and replied as 'stressed' and 'anxious'.

Three quarters of the group feel that the biggest risk they currently face is the potential impact of COVID-19 on global wine markets, including the effect on the distribution chain and the supply-demand balance. At present they feel uncertain as to what may happen six to twelve months ahead.

New Zealand Winegrowers report that Sauvignon Blanc export sales were up by 6 percent in June and 23 percent in July 2020 compared with the same months in 2019. June's Sauvignon Blanc exports were 50:50 vintage 2019 and vintage 2020 followed by a virtual change over in vintages in July with 80 percent of wine exported being of vintage 2020. This shows that market demand for New Zealand Sauvignon Blanc has been strong in the year to June 2020, lowering stock levels.

Demand continues to be good both globally and domestically via the major retail outlets, however those wineries relying heavily on the restaurant trade and small retail outlets are suffering and looking for alternatives such as on-line sales.

New Zealand Winegrowers report that all wineries are facing increased uncertainty on future sales in a world impacted by COVID-19, but if supermarket sales continue at current levels the signs, overall for the industry, are positive.

Many of the survey group raised the fact that rising input expenses is reducing business profitability and is a significant concern. Some are looking to increased mechanisation to reduce rising labour costs.

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

COVID-19 dominated growers concerns but some of the other risks raised by growers included:

- biosecurity incursions from foreign pests such as the Brown Marmorated Stink Bug or Glassy Winged Sharpshooter, as well as an increase in potential impact from relatively new pests, such as the Harlequin Ladybird, which can be found in all the main viticulture areas;
- water security in the future after two significant seasonal droughts;
- trunk disease becoming more prevalent with the risk of shortening a vineyard's commercial life;
- climate change causing more droughts and extreme rainfall events.

Environmental and Natural Resource Management

The summer of 2020 was the second drought year in a row for Marlborough.

Three quarters of respondents said they had adequate irrigation water in 2020. A quarter had 'just enough' but irrigation limitations had a negative effect on yields for some.

A third of the group already have an alternative source of water for when river abstraction is not available or their bores struggle to draw water. A further quarter are considering alternative sources such as storage dams. The remainder believe that their current water resource will continue to be adequate.

There have been a number of new dams constructed in vineyards around Marlborough over the past few seasons which is giving those individual growers increased water security.

In February 2020 Marlborough District Council's Proposed Marlborough Environment Plan (PMEP) decision document was released after two years of work by the hearings panel, submitters and council staff. Essentially under the PMEP Marlborough wine grape growers have retained the status quo for using surface water for irrigation, but Fish & Game have lodged an appeal against the PMEP's provision for water allocation, which will go to the Environment Court. Wine Marlborough report that the appeal process is likely to take many years as the recent Resource Management Act Amendment 2020 will first require changes to the PMEP plus the government's recently released National Environmental Standard and National Policy Statement for freshwater management will also influence the PMEP. In the meantime the status quo for surface water for irrigation remains.

Ten of the survey group said that they have considered the effects of climate change on their business although responses suggest that the current pandemic rather overshadowed this issue. Some have already implemented, and others are considering, various mitigating actions including:

- investing in water storage to combat drought;
- using soil moisture or other monitoring technology for efficient water use and to build vine resilience by not over watering;
- constructing all weather roading to mitigate heavy rains;
- evaluating rootstocks for drought tolerance;
- careful canopy management – open enough to reduce disease pressure but also retain enough leaf in the fruit zone to alleviate heat stress and maintain varietal character in the wines.

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

At the time of writing COVID-19 is causing significant uncertainty around the supply and movement of seasonal labour throughout the country. For the wine industry in Marlborough the initial concern was whether there would be enough workers available for winter pruning. Most of the group felt that this situation had eased and that there would be enough capacity. This has been achieved in a number of ways;

- Immigration New Zealand varying visa conditions allowing Recognised Seasonal Employers (RSE) to move their summer workers between regions. Until recently many of the RSE workers were stuck in New Zealand as their home country borders were shut, but with a limited lifting of restrictions some have now returned home;
- utilisation of vintage staff unable to return to their home countries. This was facilitated by Immigration New Zealand introducing a 'Temporary Relaxation of Visa Conditions' that allowed vintage staff to do vineyard work for six weeks (for the same employer) which has now finished, leaving some of these workers still in New Zealand;
- employment of local New Zealanders who have lost jobs in other industries such as hospitality;
- increased mechanisation with the use of mechanical stripping and barrel pruning;
- an earlier start to pruning than normal coupled with excellent weather through May and June;
- a few growers are using faster spur pruning on Sauvignon Blanc as opposed to normal cane pruning.

There is considerable concern for seasonal labour supply and movement for the 2020/21 season including vintage workers. Normally there is another intake of RSE workers plus backpackers in the spring who carry out many of the manual tasks in the growing season. It remains to be seen whether it will be possible for these workers to come into New Zealand. If not, it is likely there will be a serious shortfall in summer labour availability.

New Zealand Winegrowers and Wine Marlborough are working with government and advocating on behalf of the industry, in particular requesting that vintage workers can be deemed essential skilled workers. A large number of vintage workers follow vintages around the world and frequently return to New Zealand and are very experienced. Some of these workers are still currently in the country and wineries are hoping they will be allowed to recruit them for vintage 2021. Wineries estimate that a maximum ratio of 4:1 inexperienced: experienced workers is required in any one winery during vintage to ensure that adequate training and supervision can be provided without compromising the winemaking process and worker health and safety.

Almost all the growers in the survey group use contractors for some or all tasks with about one third also employing staff directly.

Recent articles in the Wine Press and a New Zealand Winegrowers webinar in July have warned the industry of the upcoming labour constraints and that employment of local New Zealanders should be a priority. MPI have received significant government funding to help the industry recruit more locals including an attraction campaign (www.opportunitygrowshere.nz). Growers and wineries are starting to plan training options for local workers as it takes time for new staff to get up to speed. Wine Marlborough held a workshop on labour solutions in mid-August for its members.

There continues to be a shortage of skilled machinery operators, mechanics, managers, supervisory and other permanent staff. This has led to a lot of inter-company movement of skilled operators in the industry enticed by higher wages. Efforts to bring people in from other regions has been difficult, due to the cost and availability of housing.

The survey group reiterated the importance of the 'Recognised Seasonal Employer' (RSE) Scheme to the viticulture industry and that it is very important to care for the workers who come on the scheme with good accommodation and fair wages, so that they return regularly. Returning workers have a better understanding of the work and the quality required.

Every respondent said that increases in the minimum wage were increasing their working expenses and about half said that permanent staff wages and contractor machinery operations are increasing in line with the minimum wage. Many are supportive of the wage rises but are hoping for future increases in grape prices to compensate.

Increases in labour costs and the current labour availability uncertainty due to COVID-19 are accelerating the use of mechanisation including three-row sprayers, dual operation (e.g. mowing and spraying together), machine stripping and barrel pruning.

Hot Topics

The uncertainty surrounding the COVID-19 global pandemic influenced many of the hot topics recorded by the participants. As one respondent put it 'COVID-19 will dominate everything for the foreseeable future'. Specific pandemic related responses were:

- effect of the pandemic on the supply and demand balance in wine markets;
- **difficulties and lost revenue for wine companies heavily reliant on the local and overseas restaurant trade;**
- possible disruption to various supply chains;
- **availability of RSE and other overseas labour in the 2020/21 season;**
- how well the government manages the recovery.

Further hot topics included:

- The erosion of profitability with grape prices not compensating for increasing costs.
- **Potential biosecurity incursions from overseas pests and diseases, including the Brown Marmorated Stink Bug and Glassy Winged Sharpshooter;**
- Water availability, allocation and security were once again on the minds of the group after a second summer drought in a row, and with the appeal by Fish & Game against water allocation under the PMEP to go to the Environment Court;
- **Trunk disease increasing around the region and its potential to shorten the commercial life of some vineyards;**
- Potential for over production as the wine grape area continues to expand;
- **Increasing compliance costs such as water use reporting to council and irrigation water resource consent applications under the PMEP.**

Marlborough 2020 Whole Vineyard Benchmarking Report

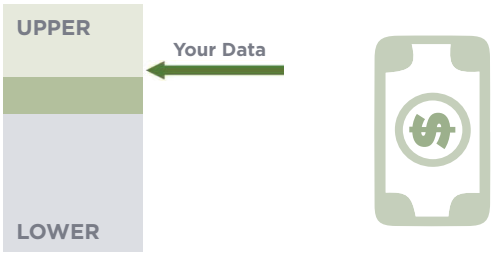
Ministry for Primary Industries
Manatū Ahu Matua

NEW ZEALAND WINE
PURE DISCOVERY

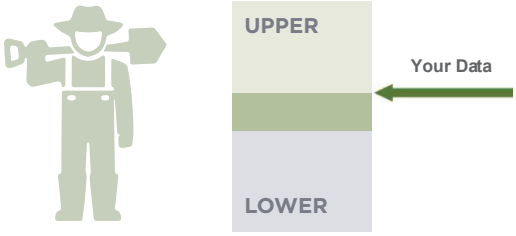
Example vineyard

Includes allowance for unpaid labour			
$ per producing ha	**Your data**	**Average**	**10-20ha**
Unpaid FTE - number	1	0.3	0.5
Income From Grapes ($/ha)	$30,704	$27,907	$32,078
Average yield (T/ha)	14.0	13.9	16.4
Average return ($/T)	$2,191	$2,003	$1,959
Labour expenses			
Pruning (total)	$3,175	$2,818	$3,497
Canopy and Crop mgt	$3,200	$1,836	$2,102
Weed and Pest control	$473	$868	$999
Other wages	$1,528	$1,797	$1,721
Total labour expenses	$8,375	$7,339	$8,342
Vineyard working Expense	$15,486	$12,696	$14,664
Cash operating surplus	$15,218	$15,297	17,428

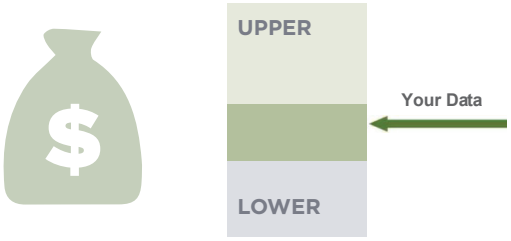
Income from Grapes $/ha



Labour Expenses $/ha

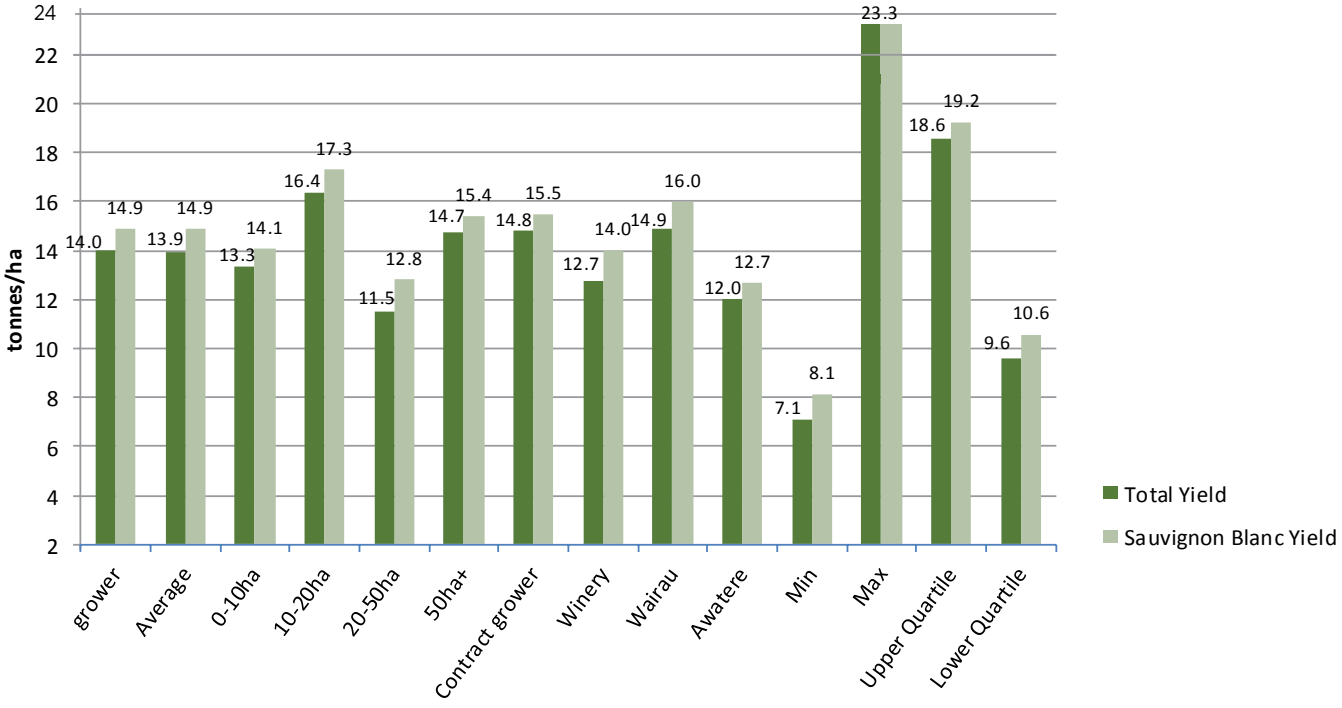


Cash Operating Surplus $/ha



Vineyard Working Expenses $/ha

Yield Analysis



Appendix/tables

Marlborough Weather Data

	Growing Degree Days[1] (GDD)			Rainfall (mm)		
Month	2019[2]	2020	Long Term Average[3]	2019	2020	Long Term Average
June	12	8	18	39	18	66
July	16	18	10	72	120	65
August	21	12	19	60	57	56
September	55	48	57	36	63	47
October	118	95	104	34	28	61
November	152	202	148	63	43	46
December	233	208	216	54	91	48
January	331	241	256	4	0	41
February	248	267	227	8	9	37
March	236	171	198	95	11	37
April	99	119	111	80	24	55
May	90	48	60	55	82	57
Total	**1,599**	**1,429**	**1,406**	**559**	**527**	**551**

[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.

[3] LTA is 1996 to 2019.

Source: NIWA (Blenheim)

Marlborough Vineyard Model Production and Income Details for 2019/20

Year ended 30 June	Area	Production per hectare (t/ha)	Total production (t)	Gross yield (%)	Brix (%)	Return ($/t)	Revenue ($)
Sauvignon Blanc	23.5	14.9	350	85%	21.2	1,905	666,200
Pinot Noir - Table	3	7.7	23	6%	22.7	3,380	78,600
Pinot Gris	1.5	13.0	20	5%	22.1	1,990	38,900
Chardonnay - Mendoza & Clone 15	1.5	8.9	13	3%	22.5	2,670	35,700
Chardonnay - all other clones	0.5	14.4	7	2%	21.4	2,090	15,000
Average	30	13.8	413	100%		2,020	834,400

Marlborough Vineyard Model Grape Prices

Year ended 30 June	2010-19 ($/t)	2015-19 ($/t)	2019 ($/t)	2020 ($/t)
Sauvignon Blanc	1,604	1 ,790	1,855	1,905
Pinot Noir - Table	3,082	3,200	3,410	3,380
Pinot Gris	1,818	1,895	1,950	1,990
Chardonnay - Mendoza & Clone 15	2,062	2,252	2,295	2,670
Chardonnay - all other clones	1,792	1,946	2,040	2,090
Average	1,710	1,885	1,945	2,020

Marlborough Vineyard Model Grape Yields

Year ended 30 June	2010-19 (t/ha)	2015-19 (t/ha)	2019 (t/ha)	2020 (t/ha)
Sauvignon Blanc	13.5	14.4	14.0	14.9
Pinot Noir - Table	6.3	6.7	5.8	7.7
Pinot Gris	10.1	10.8	8.8	13.0
Chardonnay - Mendoza & Clone 15	8.5	8.9	6.9	8.9
Chardonnay - all other clones	11.3	10.7	8.0	14.4
Average	12.3	13.0	12.5	13.8

Marlborough Vineyard Model Expenditure

Year ending 30 June	2019		Year of harvest 2020			
Vineyard working expenses	**Whole Vineyard ($)**	**% change 2020 vs 2019**	**Whole Vineyard ($)**	**producing hectare ($)**	**per tonne gross ($)**	**per vine ($)**
Hand harvesting	8,300	-29%	5,900	197	14	0.09
Pruning (and tying down)	80,400	4%	84,000	2,800	203	1.30
Canopy/Crop management	53,300	0%	53,300	1,777	129	0.82
Other wages[1]	59,900	10%	65,900	2,197	160	1.02
ACC - employees	800	-25%	600	20	1	0.01
Total labour expenses	**202,700**	**3%**	**209,700**	**6,990**	**508**	**3.24**
Disease, Pest & Weed control	35,400	-4%	33,900	1,130	82	0.52
Fertiliser & lime	13,500	6%	14,300	477	35	0.22
Electricity/Irrigation	6,900	9%	7,500	250	18	0.12
Vehicle	3,200	3%	3,300	110	8	0.05
Fuel	8,300	-11%	7,400	247	18	0.11
Repairs & maintenance	27,000	10%	29,600	987	72	0.46
General	5,300	-6%	5,000	167	12	0.08
Frost protection	2,900	-17%	2,400	80	6	0.04
Machine harvesting	23,100	2%	23,600	787	57	0.36
Total other working expenses	**125,600**	**1%**	**127,000**	**4,235**	**307**	**1.96**
Rates	8,900	4%	9,300	310	23	0.14
Water rates	2,700	-15%	2,300	77	6	0.04
General insurance	4,400	0%	4,400	147	11	0.07
ACC - owners	4,000	5%	4,200	140	10	0.06
Communication	1,400	0%	1,400	47	3	0.02
Accountancy	4,200	-10%	3,800	127	9	0.06
Legal & consultancy	3,300	-55%	1,500	50	4	0.02
Levies & subscriptions	6,000	20%	7,200	240	17	0.11
Other administration	3,900	-26%	2,900	97	7	0.04
Total overhead expenses	**38,800**	**-5%**	**37,000**	**1,235**	**90**	**0.57**
Total vineyard working expenses	**367,100**	**2%**	**373,700**	**12,455**	**905**	**5.77**
Interest	45,000	-5%	42,900	1,430	104	0.66
Rent &/or leases	12,200	7%	13,100	435	32	0.20
Depreciation	45,200	11%	50,100	1,670	121	0.77
Other expenses	**102,400**	**4%**	**106,100**	**3,535**	**257**	**1.64**
Total vineyard operating expenses	**469 500**	**2%**	**479,800**	**15,990**	**1,161**	**7.40**

[1] Previous years had a separate category 'contract machine work', in 2018 this was amalgamated with 'Other wages'. Other wages includes all other paid labour (including management) not allocated elsewhere.

Marlborough Vineyard Model Budget

			Year of harvest			
Year ending 30 June	**2019**		**2020**			
Revenue	**Whole Vineyard ($)**	**Percent Change 2020 vs 2019**	**Whole vineyard ($)**	**Per Producing Hectare ($)**	**Per Tonne Gross ($)**	**Per Vine ($)**
Income from Grapes	727,200	15%	834,400	27,815	2,020	12.87
Other Direct Vineyard Income	3,300		2,600	85	6	0.04
Net Cash Income	**730,500**	**15%**	**837,000**	**27,900**	**2,025**	**12.91**
Vineyard Working Expenses	**367,100**	**2%**	**373,700**	**12,455**	**905**	**5.77**
Cash Operating Surplus	**363,400**	**27%**	**463,300**	**15,445**	**1,122**	**7.15**
Interest	45,000	-5%	42,900	1,430	104	0.66
Rent &/or Leases	12,200	7%	13,100	435	32	0.20
Depreciation	45,200	11%	50,100	1,670	121	0.77
Net Nonfruit Cash Income	0		0	0	0	0.00
Vineyard Profit Before Tax	**261,000**	**37%**	**357,200**	**11,910**	**865**	**5.51**
Tax	85,300	-16%	71,400	2,380	173	1.10
Vineyard Profit After Tax	**175,700**	**63%**	**285,800**	**9,530**	**692**	**4.41**
Allocation of Funds						
Add Back Depreciation	45,200	11%	50,100	1,670	121	0.77
Drawings/Living Expenses[1]	68,700	-7%	63,600	2,120	154	0.98
Vineyard Surplus for Reinvestment[2]	**152,200**	**79%**	**272,300**	**9,080**	**659**	**4.20**
Reinvestment						
Capital Purchases	36,500	27%	46,400	1,545	112	0.72
Development	16,200	70%	27,500	915	67	0.42
Principal Repayments	44,300	0%	44,300	1,475	107	0.68
Vineyard Cash Surplus/Deficit	55,200	179%	154,100	5,145	373	2.38
Other Cash Sources						
Indirect Cash Income	22,500	-4%	21,500	715	52	0.33
New Borrowings	0		0	0	0	0.00
Introduced Funds	0		0	0	0	0.00
Net Cash Position	**77,700**	**126%**	**175,600**	**5,860**	**425**	**2.71**
Assets & Liabilities						
Land And Building[3]	6,642,000	8%	7,146,000	238,200	17,299	110.25
Plant and Machinery	133,000	7%	142,900	4,765	346	2.20
Total Vineyard Assets (Closing)	**6,775,000**	**8%**	**7,288,900**	**242,965**	**17,645**	**112.46**
Total Vineyard Liabilities (Closing)	**887,400**	**-5%**	**843,100**	**28,105**	**2,041**	**13.01**
Total Equity	**5,887,600**	**9%**	**6,445,800**	**214,860**	**15,604**	**99.45**

Notes: Figures may not add to totals due to rounding.

[1] Drawings refers to living expenses.

[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 plus 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 30th June 2020.

Calculated ratios

Vineyard working expenses	2019 Whole Vineyard	2020 Whole Vineyard
Vineyard working expenditure/NCI[1]	50%	45%
EBIT[2]	306,000	400,100
EBIT/Total Capital	4.5%	5.5%

Notes:

Figures may not add up to totals due to rounding

[1] Net cash income.

[2] Earnings before interest and tax. EBIT for the vineyard model excludes an allowance for unpaid labour which in 2020 amounted to 0.3 Full Time Equivalent

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

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