NEW ZEALAND WINE
PURE DISCOVERY

Ministry for Primary Industries
Manatū Ahu Matua

Vineyard Benchmarking Report

Marlborough 2018

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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 June 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 - 2018 Viticulture Benchmarking

Key Performance Indicators

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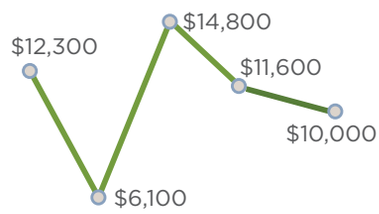
Profit Before Tax $

$10,000 per hectare

↓14% to June 2018



Profit $ Per Ha
Last 5 years

Income
Per Hectare

$24,690 to June 2018

↓ 5%

Working Expenses
Per Hectare

$11,135 to June 2018

↑ 3%

EBIT[1] total capital, for the Model

5.2%

↓ 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

12.7 tonnes per hectare

↓ 9%

Production
S Blanc Yield

14.0 tonnes per hectare

↓ 10%

Price
S Blanc Price

$1,825 dollars per tonne

↑ 4%

Vintage 2019 Outlook grape grower view as at May 2018

Growers are cautiously optimistic regarding the year ahead with growers forecasting a sizable crop up 6 percent on the outturn achieved in 2018. Growers also anticipate similar grape prices, in 2019. Underlying industry confidence remains strong, with some concern around labour, climate change, biosecurity and succession.

*figures are rounded for ease of reading

MARLBOROUGH VINEYARD MODEL The Marlborough model remains at 30 producing hectares and for 2018 data was sourced from 47 vineyards. 12 vineyards are located in the Awatere Valley and 35 vineyards in the Wairau Valley. There are 33 contract growers and 14 winery operated vineyards in the survey group. Seven of the vineyards are 0-10 hectares, 11 are 10-20 hectares, 17 are 20-50 hectares and 12 are 50 hectares or larger. Sauvignon Blanc is the dominant grape variety in the model representing 77 percent of the producing area, followed by Pinot Noir, Chardonnay, Pinot Gris and Riesling. Five vineyards are BioGro NZ certified.

Key points

Climatic conditions dominated the 2018 vintage. A season of two halves – warm and dry until New Year, warm and very wet through to harvest.

In February, Blenheim received 181 mm of rain which is the highest amount of February rainfall recorded since records commenced in 1930. Ex-cyclone Gita was responsible for 108mm of February's rain in just three days.

The 2017/18 season was the warmest experienced in Marlborough since grapes were planted in 1973 yet ripening was ultimately delayed by excessive vegetative growth due to significant and regular rainfall events January through March.

Vineyard model yield was 4 percent lower than the average of 2013-17. Sauvignon Blanc yield was 5 percent lower than the 2013-17 average.

Price per tonne was up 5 percent over 2017 at $1930 per tonne with Sauvignon Blanc up 4 percent at $1825 per tonne.

Vineyard working expenses continue to rise, up 3 percent over 2017 and 15 percent compared with the average of 2013-17.

The 2018 model profit before tax was down 8 percent at $10 000 per hectare compared with the 2013-17 average of $10 950.

Sauvignon Blanc was considerably riper at harvest compared with 2017 when large volumes had to be harvested at low brix. In 2018, the average brix in the group was 21.0 compared with 19.5 in 2017.

Key parameters, financial results for the Marlborough vineyard model[1]

Year ended 30 June	2008-17	2013-17	2017	2018[2]
	10 year average	5 year average		
Producing area (ha)	30	30	30	30
Total production[2] (t)	365	400	419	382
Average production (t/ha)	12.2	13.3	14.0	12.7
Average return ($/t)	1745	1800	1840	1930
Sauvignon Blanc return ($/t)	1650	1703	1755	1825
Net cash income ($)	650 590	726 280	781 700	740 700
Vineyard working expenses ($)	279 580	290 980	323 100	334 000
Vineyard profit before tax ($)	252 320	328 480	348 800	301 300
Vineyard surplus for reinvestment[3] ($)	165 650	187 440	77 500	172 700
EBIT[4]/Total Capital	5.3%	7.1%	6.0%	5.2%

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 to totals due to rounding.

[1] The sample of vineyards used to compile this model has changed in each of the past five years (2014 – 2018 harvests). Caution is advised if comparing data between these years.

[2] Grapes are harvested in the autumn, so the 2018 year refers to fruit harvested in autumn 2018.

[3] 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.

[4] Earnings before interest and tax.

Marlborough Model

Marlborough Vineyard Profit Drivers

	2018	2019 budget	Comment
Weather	Warm and dry October to December. Warm and very wet January to harvest.	Typical	Warm and dry start to season with ideal flowering conditions delivering excellent fruit set. 315 mm of rain January through March was 260 percent of long term average for the period. Record rainfall in February of 181 mm; 108 mm of which was delivered by ex-tropical cyclone Gita over three days. Regular rainfall and warm temperatures created high disease pressure conditions and excessive vegetative growth which delayed ripening. Rain events close to, and during harvest, caused some quality issues with botrytis and concertinaed the intake.
Yields	↓	↑	Nine percent decrease in 2018 compared with 2017 but still 4 percent higher than the 10-year average. In 2019, a 6 percent increase in yield is budgeted, close to the 2013-17 average.
Prices	↑	→	Five percent increase in 2018 compared with 2017, in part due to less over production and quality penalties than in 2017. The 2018 average price at $1930 per tonne was exactly as the model group budgeted for in 2017. Growers are budgeting for contracted prices to remain similar in 2019.
Expenditure	↑	↑	Three percent increase compared with 2017 and a 15 percent increase since 2014. In 2017, there were increased pest and disease control costs, extra canopy management work, and rising labour costs. Forecast to increase in line with minimum wage rises in 2019.
Profit before tax	↓	↑	Fourteen percent down compared with 2017 and an 8 percent decrease compared with the 2013-17 average. Increased forecast yields would improve profit in 2019.
Morale	↓		Distinct downward change in model grower's morale recorded due to two climatically very difficult seasons in a row, static prices, and rising costs.

Financial Performance of the Marlborough Viticulture Model in 2018

Weather

	Growing degree days[1] (GDD)			Rainfall (mm)		
Month	**2017**	**2018**	**Long Term Average**	**2017[2]**	**2018**	**Long Term Average[3]**
October	125	121	104	59	32	64
November	167	154	145	86	16	45
December	207	270	216	20	22	46
January	265	333	253	27	80	45
February	224	244	225	62	181	40
March	196	219	197	47	54	36
April	120	115	111	131	52	55
Total	**1304**	**1457**	**1252**	**433**	**438**	**330**

[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 centigrade). They help predict the date that a flower will bloom or a crop reach maturity.

[2] Year refers to year of harvest.
[3] Long Term Average (LTA) is 1996 to 2018.
Source NIWA (Blenheim).

2017/18 was a season of two distinct weather halves with warm, dry weather until the end of December and warm, wet weather from New Year through until harvest.

The mean temperature of 16.24 degrees centigrade for September 2017 to April 2018 is the warmest experienced in Blenheim since grapes were first planted in 1973[1]. Growing Degree Days (GDD) were 1457 for the 2017/18 growing season which was 16 percent higher compared with the Long-Term Average (LTA) of 1252.

The season started dry with only 70 mm rain October to December 2017 compared with the LTA of 155 mm. From January to the end of March 2018, there were regular and significant rain events with a total of 315 mm, 260 percent of the LTA of 121 mm for the same period.

February 2018 recorded the highest February rainfall in the recording period 1930 - 2018 with 181 mm, 52 mm higher than the previous high recorded in 1936[2]. This was heavily influenced by ex-tropical cyclone Gita which delivered 108 mm to the

[1] Plant and Food Research, May Winepress 2018.
[2] Plant and Food Research, March Winepress 2018.

region between the 19th and 21st of February. February's 181 mm was 452 percent of the long-term average of 40 mm.

High summer rainfall stimulated vines to become very vegetative with many growers reporting difficulty in keeping up with canopy management, mowing and spraying. These conditions increased disease pressure, particularly for botrytis and slowed down ripening. With such high GDD, ripening would have been significantly earlier if this strong vegetative growth had not occurred.

Flowering conditions in December 2017 were good with 270 GDD compared with the long-term average of 216. Industry expectations were for lower bunch numbers in general due to cool initiation conditions in December 2016, but good flowering conditions led to high levels of pollination and excellent berry numbers. Rainfall from January through to harvest resulted in good berry size.

There was a low incidence of frost damage in 2017/18 with few frost events experienced.

The warm season significantly improved sugar levels compared with 2017. The average Sauvignon Blanc brix recorded at harvest by the group was 21.0 compared with 19.5 in 2017. It is likely that target brix would have been reached earlier if the rain-induced excessive vegetative growth had not occurred.

A rain event of 40-70 mm across the region between March 22nd and 24th increased disease pressure with botrytis becoming an issue in many blocks. Fortunately, there was then a two-week dry period enabling a large amount of fruit to be harvested in good condition. A further rain event of around 30 mm on April 9th accelerated existing disease infection and botrytis became a major issue with some growers having to manually drop infected fruit. The 'slip skin' expression of botrytis (not that common in Marlborough) spread very quickly and harvesting was concertinaed to get grapes off before the quality deteriorated below receiver specifications.

Yields

The model vineyard average yield was 12.7 tonnes per hectare, a 4 percent decrease compared with the 2013-17 average but still 4 percent higher than the 10-year average. This is similar average yield to the New Zealand Winegrowers vintage survey of 12 tonnes per hectare for 2018.

Sauvignon Blanc yield of 14 tonnes per hectare was a 5 percent decrease compared with the 2013-17 average, a period which includes three of the highest model yield vintages recorded.

The Pinot Noir yield was just under seven tonnes per hectare, slightly down on the

2013-17 average. Pinot Noir yields are significantly influenced by the wine type the fruit is destined for. Target yields for sparkling wine or rosé are significantly higher than those for table wine. In 2018, there were particularly variable yields reported for this variety.

Pinot Gris and Chardonnay yields were similar to 2017, Riesling yield was 20 percent down compared with 2017 but included some late harvest Riesling (for dessert wine) at low yields.

Many growers report that winery yield limits (caps) have remained consistently at the higher levels experienced in the previous three seasons as wine companies have sought to secure supply to meet demand. In 2018, four growers in the survey group sold excess Sauvignon Blanc fruit over yield caps at discounted prices.

In 2018, an estimated 350 tonnes (1.8 percent) of Sauvignon Blanc were unharvested in the survey group because either fruit was rejected for not reaching quality standards or was over the winery cap.

Sauvignon Blanc yields ranged from 7 to 20 tonnes per producing hectare in the 2018 model for mature blocks. Although flowering conditions were very good, there were several vineyards where low bunch numbers and small bunches reduced yield due to the poor initiation conditions in December 2016 and possibly the effect of over cropping in the previous season. For many growers, low initial bunch numbers were a concern but the excellent pollination and subsequent rainfall more than compensated by ensuring good berry numbers and berry size to ensure target yields were achieved.

Production

Average Yield

12.7 tonnes per hectare

↓ 9%

Several growers reported that diseased fruit reduced their yield either because it was removed prior to harvest or because the harvester left it behind (infected fruit can simply fall off in front of the harvester or be left behind if mummified).

The New Zealand Winegrowers (NZW) Vintage Survey reported that the total 2018 Marlborough production was around 313 000 tonnes which is 4 percent up compared with 2017. The Marlborough Sauvignon Blanc total at 269 400 tonnes is 2 percent up compared with 2017. The increase in volume, compared with the model vineyard 2018 vintage decrease, is largely influenced by the 1553 hectares of Sauvignon Blanc in the vintage survey coming into production with first and second year crops.

Quality

Winemakers report that despite the difficult conditions around vintage they are in general very pleased with what is in the tank. Compared with 2017, grapes were riper at harvest time and two weeks of dry weather at the end of March coupled with careful programming ensured large volumes of fruit were harvested at target parameters.

Sauvignon Blanc average sugar levels were 21 brix for the whole model group, a significant improvement on the 19.5 achieved in 2017 due to fruit being considerably riper at the same date compared with the previous vintage

The Awatere valley growers in the model vineyard achieved an average Sauvignon Blanc brix of 21.7 compared with 20.8 for the Wairau valley growers. The lower part of the Awatere valley received some 30 mm less rain at the crucial event of the 22-24 March and many blocks consistently have smaller canopies due to soil type and higher wind run. These proved to be advantages in the 2018 vintage as there was such excessive growth on the fertile soils which slowed ripening.

Prices

Model group average price at $1 930 per tonne rose 5 percent compared with 2017 and 7 percent compared with the 2013-17 average. The average price was also exactly as the model growers had forecast for 2018.

Sauvignon Blanc is the main driver of price and at $1825 per tonne, increased 4 percent compared with 2017. Seven of the model growers had penalty clauses activated, primarily due to disease issues. The penalties varied between $150 and $700 per tonne.

Price

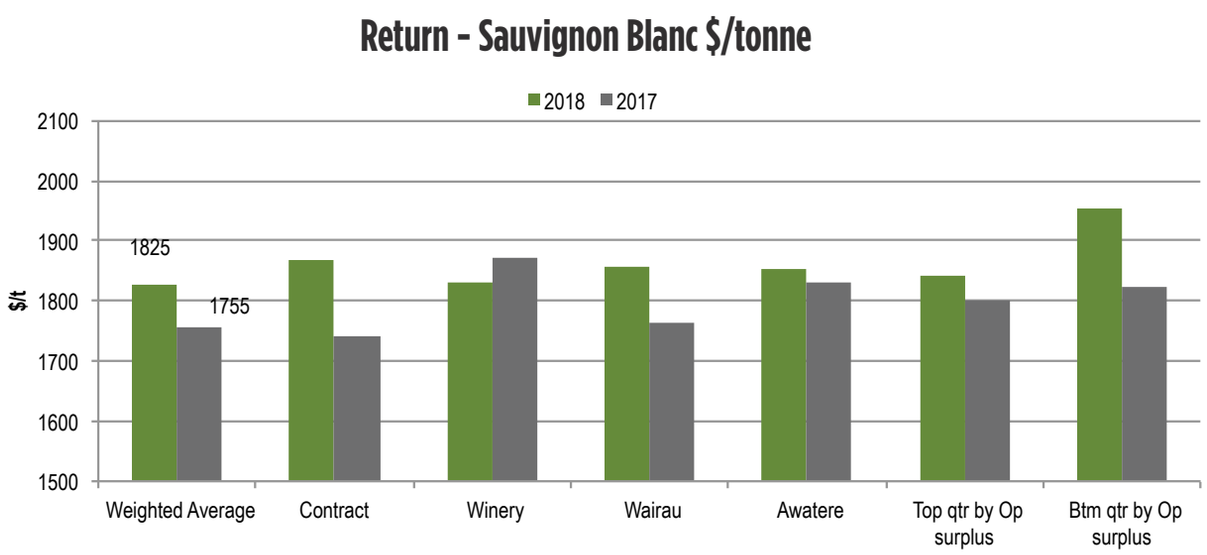
S Blanc Price

$1,825 dollars per tonne

↑ 4%

Only 1.3 percent of Sauvignon Blanc over winery yield limits was sold at a lower price compared with 2.5 percent in 2017 and 5 percent in 2016. Average price of the 2018 excess fruit was $990 per tonne.

Pinot Noir prices increased 6 percent compared with 2017 and 5 percent compared with 2013-17. Pinot Noir price is heavily influenced by the wine type it is destined for with premium table wine grape prices significantly higher than for sparkling but with a much lower target yield.



Expenditure

Model vineyard working expenses continued their steady rise since the low of $7 647 per hectare in 2012 and were at $11 135 per hectare in 2018, a 3 percent increase compared with 2017 and a 15 percent increase compared with the average of 2013-17.

Labour expenses rose 6[3] percent compared with 2017 reflecting both increased labour rates and extra canopy management and mowing costs due to the wet summer causing excessive vine canopy and grass sward growth. Pruning increased by 3 percent following a 3 percent increase in the previous year, reflecting higher labour rates. Many blocks still required crop moderation with growers reporting a desire to ensure crop loading was within winery limits and to help avoid the difficulties of ripening the crop experienced in 2017. Machine thinning continues to become more popular and is also used at lower levels for trash removal to help botrytis control.

[3] Contract Machinery Expenses, previously reported separately, have been included in labour expenses from 2018. 6 percent reflects the true increase of the combined categories.

Working Expenses
Per Hectare

$11,135
to June 2018

↑ 3%

Disease, pest and weed control costs continue to rise. The labour component increased 12 percent and the chemicals 10 percent compared with 2017. Most growers have now reduced their spray interval for powdery mildew and there were more botrytis applications required. Growers also reported the use of more expensive chemistry for controlling diseases and glyphosate-resistant ryegrass. Mealy bug is becoming more widespread with associated additional chemical control costs.

Other wages increased 6 percent compared with 2017 reflecting increased labour rates and extra rounds of mowing vineyard mid rows.

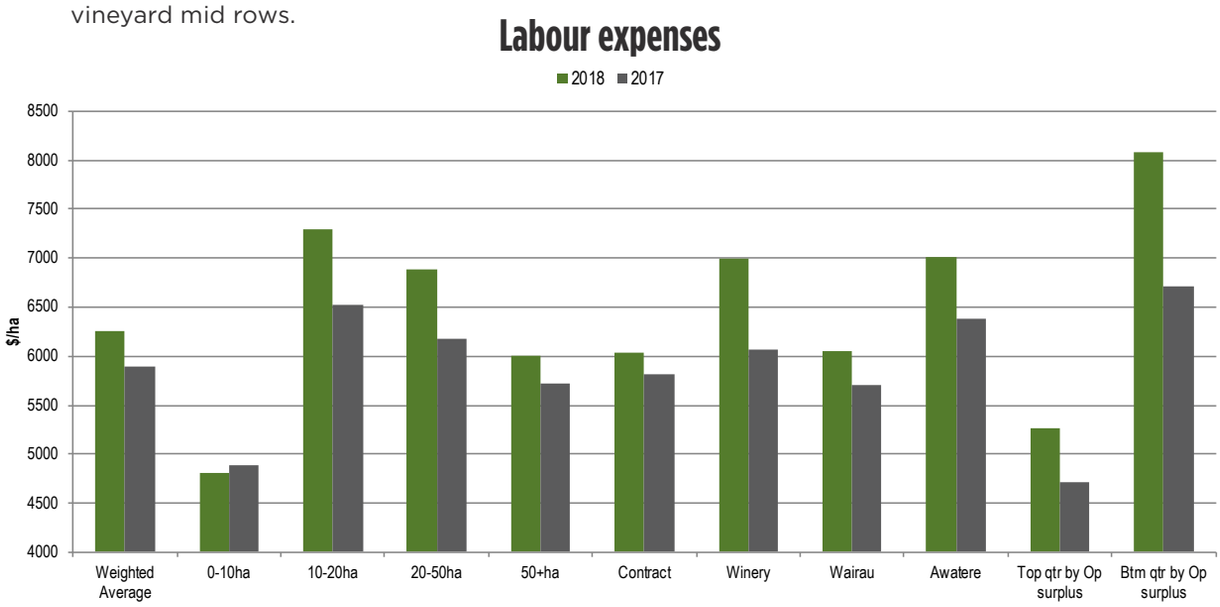
Growers continue to invest in fertiliser, keeping to a similar high level as in 2017 indicating their acknowledgement of the importance of nutrition, particularly in high cropping blocks. Fertigation is an increasingly popular method of fertiliser application.

Irrigation costs (electricity and water) decreased 8 percent over 2017 and are the lowest since 2014 as the wet second half to the season reduced irrigation use considerably.

Frost protection expenses were 27 percent down compared with the average of 2013-17 due to very few frost events experienced in spring 2017.

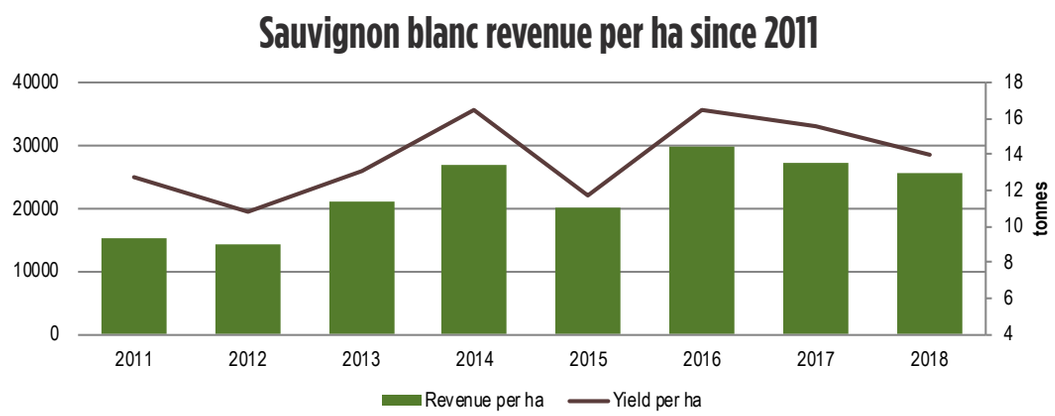
Machine harvesting costs were up 6 percent compared with 2017.

Overhead costs were slightly down compared with 2017 partly due to grape grower levies being less, in line with the decreased yield. Overhead costs tend to vary year to year due to items such as accountancy and legal and consulting being year-specific.



Financial Result

Net cash income for the model at $24 690 per hectare was 5 percent down compared with 2017 at $26 055 per hectare but 2 percent up compared with the average of 2013-17 and still the fourth highest out of the last ten vintages.



The model profit before tax of $301 300 is a 14 percent decrease compared with 2017 and an 8 percent decrease compared with the average of 2013-17. The reduction in profit is result of the combination of decreased net cash income (due to lower yield) and increased expenses.

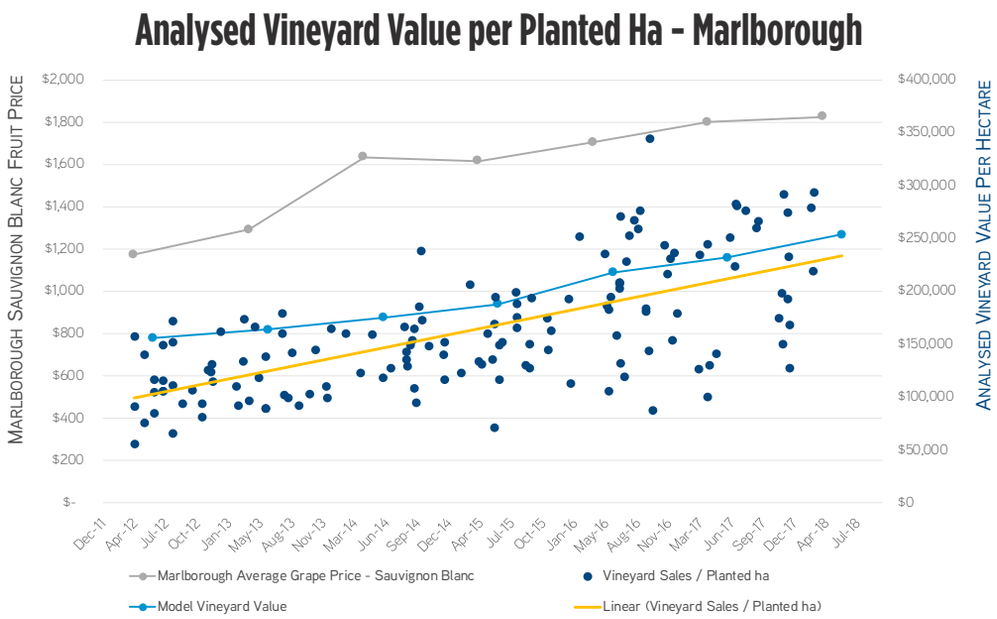
The 2018 vineyard profit before tax equates to $10 000 per hectare compared with the $10 950 per hectare average of 2013-17.

Vineyard model profit after tax is $199 500 compared with $105 000 in 2017 as tax payments were high in 2017 at $243 800 due to the record result in 2016. Tax in 2018 is $101 800 based on the more modest profitability in 2017 and calculated using the survey tax model. Tax payments are expected to be lower in 2019 based on the lower profitability in 2018.

Fifteen participant vineyards invested over $10 000 in capital expenditure in 2018, mostly on a range of tractors, machinery, utility vehicles and vineyard buildings. Seven carried out new development or redevelopment in 2018, down from 11 in 2017. It is also evident that a further number of very large developments were planted in 2018 by companies outside of the model group.

Vineyard property values are perceived by the group to be static compared with 2017 after significant increases in the previous two years. The average vineyard value in the model is now $221 900 per planted hectare. A small number of premium location vineyards with few buildings have sold for around $300 000 per planted hectare[4].

[4] May Winepress 2018.



Source: Colliers International Rural & Agribusiness Valuation & Advisory

Tim Gifford, Colliers International produces an independent valuation of the model vineyard and currently assesses the model vineyard, if it were located on the central Wairau plains, at $253 000 per planted hectare.

Quartile Analysis

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.

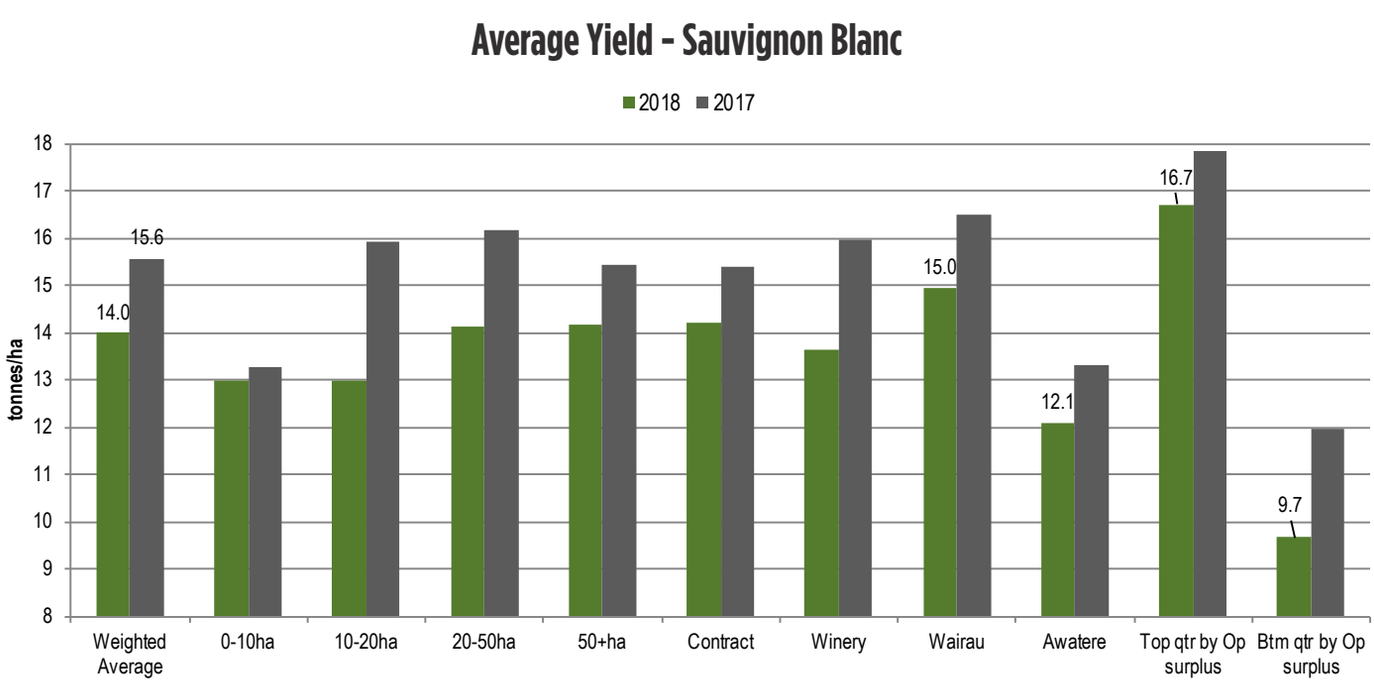
The higher prices per tonne being paid for lower yield and higher quality are not compensating the growers compared with producing a higher yield at a lower price. The average price of the upper quartile for the past four seasons is $1850 per tonne compared with $2090 per tonne for the lower quartile whereas the cash operating surplus is $21 840 compared with $6410 per hectare, respectively.

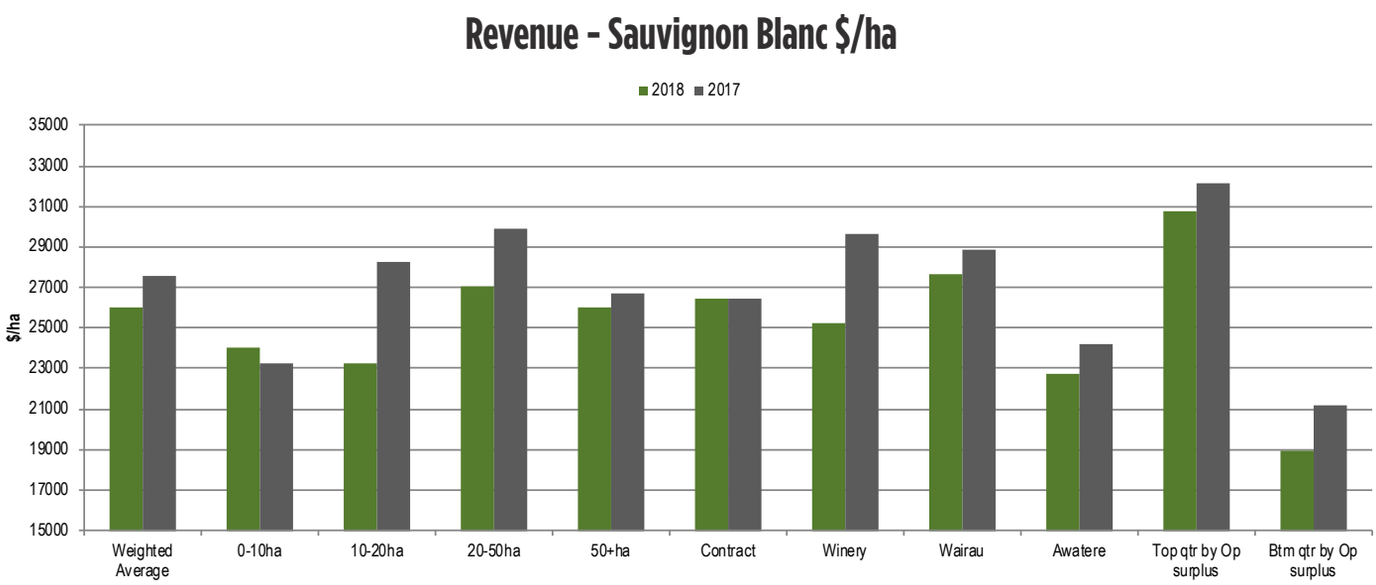
The vineyard expenses of the lower quartile vineyards are higher at $12 550 compared with $9090 per hectare for the higher quartile reflecting the increased area of other varieties such as Pinot Noir which require more labour inputs on average. Increased crop moderation costs may be required to achieve lower yield caps in prolific years.

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

Marlborough vineyard quartile profitability trends

	2014/15	2015/16	2016/17	2017/18	Average
Upper Quartile – % area Sauvignon Blanc	84%	91%	92%	91%	**90%**
Lower Quartile – % area Sauvignon Blanc	84%	77%	79%	76%	**79%**
Upper Quartile – Average yield	12.7	18.8	17.4	16.3	**16.3**
Lower Quartile – Average yield	7.7	11.1	10.8	8.5	**9.5**
Upper Quartile – Price $/T	1 855	1 855	1 820	1 865	**1 850**
Lower Quartile – Price $/T	2 170	2 195	1 890	2 110	**2 090**
Upper Quartile – Net cash income ($/ha)	23 330	37 440	32 570	30 390	**30 930**
Lower Quartile – Net cash income ($/ha)	15 700	22 900	19 500	17 710	**18 950**
Upper Quartile – Vineyard working expenses ($/ha)	8 380	8 750	9 370	9 850	**9 090**
Lower Quartile – Vineyard working expenses ($/ha)	11 940	12 740	12 300	13 210	**12 550**
Upper Quartile – Cash operating surplus ($/ha)	14 950	28 680	23 200	20 530	**21 840**
Lower Quartile – Cash operating surplus ($/ha)	3 770	10 160	7 200	4 500	**6 410**
Upper Quartile – EBIT/ Total Capital	7.7%	10.8%	7.4%	7.2%	**8.3%**
Lower Quartile – EBIT/ Total Capital	0.2%	3.7%	1.9%	0.6%	**1.6%**





Expected Financial Performance of the Marlborough Vineyard Model in 2019

Growers have budgeted for a healthy model average yield of 13.5 tonnes per hectare in 2019 which is a 6 percent increase compared with 2018 and slightly above the average for 2013-17 of 13.3 tonnes per hectare. All variety yields are forecast to increase except for Pinot Gris which is anticipated to stay the same. The Sauvignon Blanc yield forecast, at 14.9 tonnes per hectare, is close to the average 2013-17 of 14.7 tonnes per hectare. Most growers were using their winery yield cap as their estimate of 2019 production, reflecting excellent fruit bud initiation conditions in December 2017.

The forecast prices for the average of all varieties at $1960 per tonne and Sauvignon Blanc at $1865 per tonne are almost the same as that achieved in 2018 once allowing for fruit sold at a lower price due to quality penalties or surplus over yield limits.

Growers in the group do not expect much change in price or yield limits, indicating stable contractual agreements.

New Zealand Winegrowers (April 2018) report that markets in the United States and Canada continue to grow but the Australian market is down slightly in the previous 12 months. With a total 2018 vintage production of 419 000 tonnes, against the pre-season vintage survey anticipating 450 000 tonnes, it is expected that some wineries will be short of wine against potential sales. The price of bulk wine at present is similar to June 2017 but the 3-month trend is for slightly increasing prices.

Industry Issues and Developments

Seasonal Impacts on Profitability

Climate dominated the seasonal performance of the model group's vineyards in 2018:

- a warm and dry first half led to rapid early vine development. Great conditions during flowering ensured an excellent fruit set in most vineyards which mitigated widely reported lower bunch numbers. Many growers invested in shoot, bunch and mechanical thinning to moderate crops to winery yield caps after struggling to ripen large crops in the 2017 vintage;
- excessive and regular rainfall events from January through March led to an unprecedented level of vegetative growth and serious disease pressure, particularly with botrytis. In many cases, growers struggled to keep up with canopy management and mowing which exacerbated the conditions for disease infection further;
- a large rainfall event on the 22nd March followed by another on the 9th April put pressure on wineries to harvest grapes as fast as possible and the vintage became seriously concertinaed. Botrytis and it's 'slip skin' manifestation began to move rapidly through ripe fruit. Seven model growers reported quality penalties that were enforced, mostly for botrytis and slip skin. A few cases were noted where the receiver was unable to harvest the fruit in time and quality deteriorated leading to a penalty price reduction.

The good fruit set in many vineyards required significant crop moderation expenses including an increase in machine thinning which at low power application is also being used to remove trash to combat botrytis.

Disease, pest and weed control continues to increase in both importance and expense. Two thirds of the group noted that they were having to spray more frequently. Partly this is due to reducing the spray interval for powdery mildew protection but also because of the increased spread and incidence of mealy bug. In the wet and humid season, additional botrytis sprays were applied. It was noted that there is an increased uptake of more expensive chemistry to combat powdery mildew and botrytis plus glyphosate-resistant ryegrass.

A number of growers are concerned that prices are remaining static, yet costs are going up reducing profitability and leaving increasing yield as the only way to maintain or improve returns. Increased yield can only be achieved if within winery limits.

Grower Morale and Business Viability

There was a distinct shift in grower morale. Only half of respondents said they felt positive about their business compared with more than three quarters in 2017. They confirmed this was partly due to going through a second wet and difficult vintage in a row. Other negative factors include static prices, rising costs and labour availability issues. Succession is also in some older participant's minds with an increased interest in leasing out their vineyards. Five specifically mentioned they are investigating leasing their vineyards.

The majority of the contract growers in the group reported positive relationships with their buyer wineries and some felt that their receivers had learnt from mistakes in the wet 2017 vintage to better handle 2018. However, there were a couple of growers that felt that relationships had suffered with cases where harvesting had been left too long by wineries, leading to quality downgrading and penalties.

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

- climatic risks were the most reported, after two wet and challenging vintages in a row. These risks include excessive rain, frost and poor flowering conditions impacting on yield and quality or even causing complete crop failure;
- recent wet vintages are a sign of general climate change that will cause more frequent extreme and negative weather events;
- the increasing time and expense required to combat diseases, pests and weeds;
- increasing labour costs and labour shortages;
- future changes to immigration policy potentially reducing Recognised Seasonal Employer (RSE) and working holiday employee numbers;
- a number of growers expressed concern about commoditisation of Sauvignon Blanc with high volume and low prices increasing in the market place eroding the premium market position;
- erosion of 'Brand Marlborough' through the current allowance to blend up to 15 percent of out of region juice, perceived lack of control of bulk wine once overseas and poor quality in high volume, low price offerings;
- biosecurity with the recent examples of PSA in kiwifruit and *Mycoplasma bovis* in the dairy industry.

Environmental and Natural Resource Management

The 2017/18 season received a similar high amount of rainfall (438 mm) compared with 2016/17 (433mm) October to April. However as three quarters of that rainfall was received during January to March, irrigation requirements were reduced significantly compared with 2016/17. Data from Fruition Horticulture shows a 30 percent decrease in irrigation volume across the Marlborough vineyards they monitor compared with 2016/17 and a 50 percent decrease compared with 2015/16. Only 2001/02 showed a lower irrigation volume in the past 19 years of Fruition Horticulture's records and that was over a considerably smaller vineyard area.

Eleven growers in the model had considered Sustainable Wine New Zealand's advanced programme 'SWNZ Plus'. Five are hoping to go ahead with the programme.

Ninety percent of the respondents are not interested in converting to organic or biodynamic production. Eleven said they have actively considered it but only three will either convert or expand existing production. The main reason against conversion is perceived to be that the economics are less favourable, with lower production and lack of a sufficient price premium to cover the lost yield. Some growers stated they would rather pursue more sustainable practices within conventional growing.

Marlborough District Council's Marlborough Environment Plan which includes future water allocation was notified on 9th June 2016 and was closed for submissions on 23rd June 2017. For new and renewed water resource consents, monthly limits using Aqualinc's IRRICALC calculation tool have now been imposed which some growers are concerned about and have put in opposing submissions. Hearings for water allocation and use are scheduled for December 2018.

Four growers in the model had renewed water permits in the previous year and three of those had used a consultant to put together the resource consent application. Most had found the process reasonable but costly and time consuming.

Growers with a limited water supply or reliance on schemes such as the Southern Valleys Irrigation Scheme continue to consider alternative sources such as building storage dams.

Labour

More than half the respondents stated that they were facing labour issues of some kind including:

- difficulty in obtaining and keeping skilled machinery operators or supervisors;
- contractor gangs arriving late, leading to crop husbandry timing issues;
- contractor gangs 'picking and choosing' tasks or locations;
- increased labour rates, particularly for permanent staff.

The group were virtually unanimous in anticipating that recent and planned minimum wage increases will increase costs. Their concern is that if grape yield caps and prices remain static that the increased costs will simply reduce vineyard profitability.

Most of the group expect that all staff wages are likely to increase in proportion with the minimum wage increases. The shortage of skilled machinery operators has already increased wages for those staff significantly in the last year.

Hot Topics

The group reported a large and diverse range of hot topics:

Biosecurity breaches from overseas pests and diseases were one of the main concerns raised e.g. the Brown Marmorated Stink Bug. The recent *Mycoplasma bovis* outbreak in the dairy industry has concentrated grower's thoughts on the effect of similar events happening in the wine industry.

Several growers are concerned that the two recent wet vintages are the sign of general climate change and that we can expect more changeable and undesirable weather patterns.

Potential future changes to immigration rules negatively affecting the RSE scheme. The group continue to acknowledge the critical importance of the scheme to the wine industry.

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 and the pressure on local resources affecting their availability to the wider industry.

There is an established concern amongst one sector of the group around the erosion of 'Brand Marlborough'. They disagree with rules that allow up to 15 percent of out of region juice to 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.

Several growers are concerned about the new water allocation rules under the proposed Marlborough Environment Plan that have come into effect while the plan itself is still going through the hearings process. Although many growers made submissions around the water allocation rules some feel that there was a lack of co-ordinated approach to submissions and that some practical aspects are not being thought through properly.

At a meeting in June of a wide cross section of the wine industry, attendees were asked what they thought were the main issues and trends currently affecting the Marlborough wine industry. They echoed many of the model group responses but in addition made the following points:

Labour

- there are concerns around future procedures and regulations for both RSE and working holiday employees working in vineyards and wineries;
- there is already a shortage of truck drivers during vintage which is likely to get worse;
- the general ageing of the wine industry workforce and the need to attract new entrants in to the industry. Initiatives such as the recent introduction of the New Zealand School of Winegrowing in Marlborough should help.

Biosecurity is being taken very seriously with NZW employing an additional person to help the Biosecurity and Emergency Response Manager.

Industry risks:

- the wine industry's social and environmental image is at risk from the safe drinking movement and any sort of adverse publicity such as negative environmental issues;
- natural disasters such as floods and earthquakes will continue to test the industry's resilience;
- the industry's reliance on Sauvignon Blanc with increasing competition from Sauvignon Blanc grown overseas.

Production

- vineyard life expectancy – how long will a vineyard be economically viable? Increasing levels of trunk disease and viruses are already limiting some vineyards life-span;
- increasing pest, disease and weed resistance to various agrichemicals and withdrawal of effective products due to risk to health;
- potential for introduction of artificial intelligence and increased mechanisation to reduce the wine industry labour requirement.

Appendix/tables

Marlborough Weather Data

	Growing Degree Days[1] (GDD)			Rainfall (mm)		
Month	**2017[2]**	**2018**	**Long Term Average**	**2017**	**2018**	**Long Term Average**
June	32	6	19	77	18	69
July	7	4	9	34	62	62
August	8	39	19	39	66	56
September	61	64	57	26	50	47
October	125	121	104	59	32	64
November	167	154	145	86	16	45
December	207	270	216	20	22	46
January	265	333	253	27	80	45
February	224	244	225	62	181	40
March	196	219	197	47	54	36
April	120	115	111	131	52	55
May	28	63	59	57	85	56
Total	**1 409**	**1 627**	**1 396**	**590**	**701**	**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

Source: NIWA (Blenheim)

Marlborough Vineyard Model Grape Prices

Year ended 30 June	2008-17 ($/t)	2013-17 ($/t)	2017 ($/t)	2018 ($/t)	2019 budget ($/t)
Sauvignon Blanc	1 650	1 705	1 755	1 825	1 865
Pinot Noir – Table	3 060	3 080	3 040	3 245	3 255
Pinot Gris	1 825	1 845	1 865	1 945	1 960
Chardonnay – Mendoza & Clone 15	1 990	2 150	2 260	2 375	2 345
Chardonnay – all other clones	1 785	1 920	2 020	1 840	1 955
Riesling	1 675	1 730	1 750	1 945	1 830
Average	**1 745**	**1 800**	**1 840**	**1 930**	**1 960**

Marlborough Vineyard Model Production and Income Details for 2018

Grape variety	Area	Production per hectare (t/ha)	Total production (t)	Gross yield (%)	Brix (%)	Return ($/t)	Revenue ($)
Sauvignon Blanc	23	14.0	322	84%	21.0	1 825	587 400
Pinot Noir – Table	3	6.7	20	5%	22.9	3 245	65 200
Pinot Gris	1.5	11.6	17	5%	21.9	1 945	34 000
Chardonnay – Mendoza & Clone 15	1.5	9.3	14	4%	21.8	2 375	33 000
Chardonnay – all other clones	0.5	9.0	4	1%	21.6	1 840	8 300
Riesling	0.5	9.2	5	1%	21.8	1 945	8 900
Total/average	**30**	**12.7**	**382**	**100%**		**1 930**	**736 800**

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

Marlborough Vineyard Model Budget

	2017	2018
Total area	33	33
Planted area	30	30
Producing area	30	30
Total crop (tonne)	**419**	**382**
% Change	**-7%**	**-9%**
avge vines per planted hectare	**2 128**	**2 128**

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 30th June.

Marlborough Vineyard Model Budget

Year ending 30 June	2017		2018			
Revenue	Whole Vineyard ($)	% change	Whole Vineyard ($)	producing hectare ($)	per tonne gross ($)	per vine ($)
Income from grapes	772 700	-5%	736 800	24 560	1 927	11.54
Other direct vineyard income	9 000		3 900	130	10	0.06
Net cash income	**781 700**	**-5%**	**740 700**	**24 690**	**1 937**	**11.61**
Vineyard working expenses	**323 100**	**3%**	**334 000**	**11 135**	**873**	**5.23**
Cash operating surplus	**458 600**	**-11%**	**406 700**	**13 555**	**1 064**	**6.37**
Interest	56 100	-10%	50 700	1 690	133	0.79
Rent &/or leases	10 800	6%	11 400	380	30	0.18
Depreciation	42 900	1%	43 300	1 445	113	0.68
Net nonfruit cash income	0		0	0	0	0.00
Vineyard profit before tax	**348 800**	**-14%**	**301 300**	**10 000**	**788**	**4.72**
Tax	**243 800**	**-58%**	**101 800**	**3 395**	**266**	**1.59**
Vineyard profit after tax	**105 000**	**90%**	**199 500**	**6 650**	**522**	**3.13**
Allocation of funds						
Add back depreciation	42 900	1%	43 300	1 445	113	0.68
Drawings/living expenses[1]	70 400	0%	70 100	2 335	183	1.10
Vineyard surplus for reinvestment[2]	77 500	123%	172 700	5 755	452	2.71
Reinvestment						
Net capital purchases	19 500	54%	30 000	1 000	78	0.47
Development	38 400	-65%	13 500	450	35	0.21
Principal repayments	81 300	-26%	60 300	2 010	158	0.94
Vineyard cash surplus/deficit	**-61 700**	**212%**	**68 900**	**2 295**	**180**	**1.08**
Other cash sources						
Indirect cash income	27 000	-4%	26 000	865	68	0.41
New borrowings	0		0	0	0	0.00
Introduced funds	0		0	0	0	0.00
Net cash position	**-34 700**	**373%**	**94 900**	**3 160**	**248**	**1.49**
Assets & liabilities						
Land and building[3]	6 624 000	0%	6 657 000	221 900	17 409	104.30
Plant and machinery	136 600	-6%	128 800	4 295	337	2.02
Total vineyard assets (closing)	**6 760 600**	**0%**	**6 785 800**	**226 195**	**17 746**	**106.32**
Total vineyard liabilities (closing)	**992 000**	**-6%**	**931 700**	**31 055**	**2 437**	**14.60**
Total equity	**5 768 600**	**1%**	**5 854 100**	**195 140**	**15 310**	**91.72**
Liability percentage	20%		15%			
Equity percentage	80%		85%			

Marlborough Vineyard Model Expenditure

Year ending 30 June	2017		2018			
Vineyard working expenses	Whole Vineyard ($)	**% change**	Whole Vineyard ($)	producing hectare ($)	per tonne gross ($)	per vine ($)
Hand harvesting	5 000	8%	5 400	180	14	0.08
Pruning (and tying down)	72 500	3%	74 700	2 490	195	1.17
Canopy/Crop management	46 200	10%	50 600	1 687	132	0.79
Other wages	50 000	13%	56 600	1 887	148	0.89
ACC – employees	800	0%	800	27	2	0.01
Total labour expenses	**174 500**	**8%**	**188 100**	**6 270**	**492**	**2.95**
Weed & pest control	30 500	10%	33 500	1 117	88	0.52
Fertiliser & lime	10 500	3%	10 800	360	28	0.17
Electricity	5 900	–8%	5 400	180	14	0.08
Vehicle	2 700	22%	3 300	110	9	0.05
Fuel	6 000	–2%	5 900	197	15	0.09
Repairs & maintenance	23 300	4%	24 300	810	64	0.38
General	4 400	0%	4 400	147	12	0.07
Frost protection	3 500	–40%	2 100	70	5	0.03
Contract machinery work	3 600	–100%	0	0	0	0.00
Machine harvesting	20 300	6%	21 600	720	56	0.34
Total other working expenses	**110 700**	**1%**	**111 300**	**3 710**	**291**	**1.74**
Rates	8 600	–13%	7 500	250	20	0.12
Water rates	2 400	8%	2 600	87	7	0.04
General insurance	5 000	–12%	4 400	147	12	0.07
ACC – owners	4 800	–15%	4 100	137	11	0.06
Communication	1 500	0%	1 500	50	4	0.02
Accountancy	4 700	2%	4 800	160	13	0.08
Legal & consultancy	2 100	–19%	1 700	57	4	0.03
Levies & subscriptions	5 900	–10%	5 300	177	14	0.08
Other administration	2 900	–7%	2 700	90	7	0.04
Total overhead expenses	37 900	–9%	34 600	1 155	90	0.54
Total vineyard working expenses	**323 100**	**3%**	**334 000**	**11 135**	**873**	**5.23**
Wages of management	**75 000**	**0%**	**75 000**	**2 500**	**196**	**1.18**
Interest	56 100	–10%	50 700	1 690	133	0.79
Rent &/or leases	10 800	6%	11 400	380	30	0.18
Depreciation	42 900	1%	43 300	1 445	113	0.68
Other expenses	184 800	–2%	180 400	6 015	472	2.83
Total vineyard operating expenses	**507 900**	1%	**514 400**	**17 145**	**1 345**	**8.06**
Calculated ratios						
Economic Vineyard Surplus (EVS)[1]	**340 700**		**288 400**	**9 615**	**754**	**4.52**

Calculated ratios

Year ending 30 June	2017	2018			
	Whole Vineyard	Whole Vineyard	per producing hectare ($)	per tonne gross ($)	per vine ($)
Economic Vineyard Surplus (EVS)[1]	340 700	288 400	9 615	754	4.52
Vineyard working expenditure/NCI[2]	41%	45%			
EVS/Total vineyard assets	5.0%	4.3%			
EVS less interest & lease/equity	4.7%	3.9%			
Interest+rent+lease/NCI	8.6%	8.4%			
EVS/NCI	43.6%	38.9%			
EBIT[3]	404 900	352 000			
EBIT/Total Capital	6.0%	5.2%			
EBIT/Total Equity	7.0%	6.0%			

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.

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

Philip Gregan, CEO NZ Winegrowers
philip@nzwine.com I 09 306 5555

Or
Daniel Hamill, Policy & Trade, MPI
daniel.hamill@mpi.govt.nz I 04 894 3422

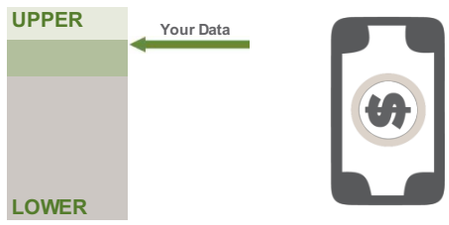
MARLBOROUGH 2018 WHOLE VINEYARD BENCHMARKING REPORT

Ministry for Primary Industries
Manatū Ahu Matua

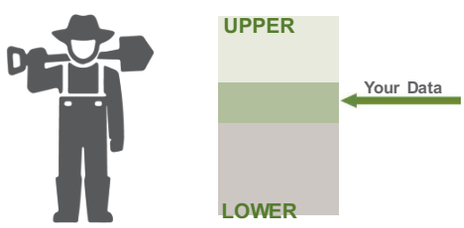
NEW ZEALAND WINE
PURE DISCOVERY

Includes allowance for unpaid labour			
$ per producing Ha	**Your data**	**Average**	**20-50ha**
Unpaid FTE - number	1.3	0.4	0.2
Income from grapes ($/ha)	$25,561	$24,758	$25,028
Average yield (T/ha)	12.9	13.0	12.8
Average Return ($/T)	$1,986	$1,906	$2,062
Labour expenses			
Pruning (Total)	$2,568	$2,519	$2,609
Canopy and Crop mgt	$2,472	$1,716	$1,499
Weed and Pest Control	$401	$809	$731
Other Wages	$1,585	$1,641	$1,875
Total labour expenses	$7,046	$6,710	$6,732
Total operating expenses	$12,319	$11,359	$11,759
Cash operating surplus	$13,472	$13,521	$13,488

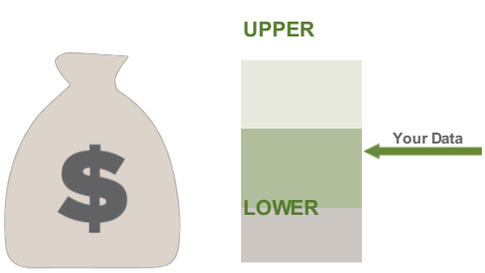
Income from grapes $/ha



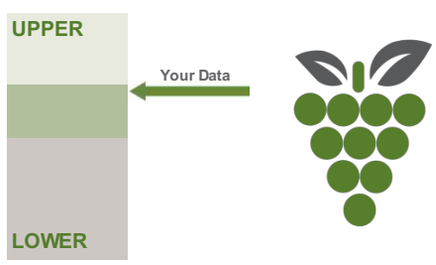
Labour Expenses $/ha



Cash operating surplus $/ha



Total operating expenses $/ha



Yield Analysis