NEW ZEALAND WINE
PURE DISCOVERY

Ministry for Primary Industries
Manatū Ahu Matua

Viticulture Model Vineyard Benchmarking Report

Marlborough 2016

NEW ZEALAND WINE
PURE DISCOVERY

Viticulture Model Vineyard Benchmarking Report

Marlborough 2016

In collaboration with

Ministry for Primary Industries
Manatū Ahu Matua

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 Nick Dalgety, Policy & Trade, MPI
nick.dalgety@mpi.govt.nz I 03 545 9472

Cover image courtesy of Palliser Estate

Key points

The **2016** harvest produced a **record yield** for the model at an average of **15.1 tonnes per hectare**. Sauvignon Blanc yielded an average of **16.5 tonnes per hectare**, a 41 percent increase compared with 2015. Pinot Noir produced its highest yield to date at **8.6 tonnes per hectare**, up 62 percent compared with 2015.

Berry numbers and weights were well above the long term average due to favourable climatic conditions. This was due to a warm ripening period and timely rainfall events.

Wineries actively sought more grapes in 2016 after a small crop in 2015 leading to a relaxing of yield caps.

Overall **price per tonne was up 5 percent** compared with 2015.

Vineyard **working expenses increased 7 percent** compared with 2015 and were **19 percent higher** than the 10 year average 2006-15.

Profit before tax was $444 700, marginally lower than 2008. This was due to the combination of high yields and increased price.

Growers continue to be cautiously optimistic with some expressing concerns about future over-supply. They forecast similar prices but reduced yields in 2017.

Key parameters, financial results for the Marlborough vineyard model

Year ended 30 June	2006-15	2011-15	2015	2016[3]
	10 year average	5 year average		
Producing area (ha)	30	30	30	30
Total production[1] (t)	339	356	324	452
Average production (t/ha)	11.3	11.9	10.8	15.1
Average return ($/t)	1 829	1 604	1 810	1 900
Sauvignon Blanc ($/t)	1 764	1 492	1 710	1 805
Net cash income ($)	626 024	575 960	592 000	868 800
Vineyard working expenses ($)	263 842	255 620	291 600	313 300
Vineyard profit before tax ($)	234 437	222 620	186 100	444 700
Vineyard surplus for reinvestment[2] ($)	160 408	123 900	39 500	413 900
EBIT/Total Capital (%)	4.9%	5.7%	4.9%	8.7%

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. Grapes are harvested in the autumn, so the 2016 year refers to fruit harvested in autumn 2016.
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.
3. The sample of vineyards used to compile this model has increased in each of the past three years (2014 – 2016 harvests). Caution is advised if comparing data between these years.

Marlborough Model

Marlborough profit drivers

	2016	2017 budget	Comment
Weather	Dry start, timely rain events. Warm second half.	Typical	Very dry until end December 2015, early varieties and areas had excellent flowering conditions. January to March warmer than average. Rain events both in January and close to harvest increased average berry weight above long term average.
Yields	↑	↓	39 percent increase in 2016 compared with 2015 and a record yield for the model. In 2017 a reduced but higher than average yield is budgeted.
Prices	↑	→	5 percent increase in 2016 compared with 2015. Prices expected to stay similar in 2017.
Expenditure	↑	→	Significant increase in 2016. High yields required more crop moderation and powdery mildew pressure increased control costs. Forecast broadly similar in 2017.
Profit before tax	↑	↓	Equal highest with 2008 vintage and more than double 2015. Forecast lower yields will reduce profit in 2017.
Morale	↑		Cautiously optimistic

Financial Performance of the Marlborough Viticulture Model in 2016

Weather

The 2015/16 season started off extremely dry following 2014/15 which was the driest season on record for Marlborough. The drought was becoming very serious with only 26 mm of rain recorded between October and December 2015. However, timely rain events in January followed by further rains in February and March ensured that yield was not restricted by drought.

A period of warm weather in late November and very early December gave excellent fruit set[1] on early flowering varieties and early areas of Sauvignon Blanc. Later areas of Sauvignon Blanc experienced cooler flowering conditions but overall this did not have an adverse effect on yields.

Growing degree days were average until mid-January when they rapidly increased with warmer temperatures continuing through to mid-April. Growing degree days for January – March 2016 were 18 percent above the long term average. This shortened the ripening period and ensured large crops were able to be successfully ripened in good time.

For a small number of vineyards, localised spring frost events caused serious damage to early shoot and inflorescences.

Data from Plant and Food Research[2] and anecdotal evidence from growers show that the higher yields were a combination of high berry number per bunch and high berry weight. Berry weight for Sauvignon Blanc on many blocks was between 5 and 20 percent above average. Above average growing degree days in January to March and rain in early January, increasing cell division and cell expansion, are the main reasons for the increased berry weight. The two main events on 23rd March and 1st April also increased berry weight.

Apart from the just over 20mm of rainfall on the 1st of April 2016, the remainder of the month was very dry and this enabled the majority of fruit to be harvested in good condition without disease becoming a major issue.

[1] A measure of the number of flowers forming berries

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

Yields

The model returned a record yield in 2016 of 452 tonnes or 15.1 tonnes per hectare, surpassing the previous record in 2014 of 14.6 tonnes per hectare. The overall yield was up 39 percent compared with 2015.

The main drivers of this increased yield were significantly heavy bunches as both berry weight and berry numbers per bunch were well above the long term average.

Sauvignon Blanc yield of 16.5 tonnes per hectare equalled the record 2014 yield up 41 percent compared with 2015. Pinot Noir had a record average yield of 8.6 tonnes per hectare, up 62 percent compared with 2015.

Pinot Gris and Chardonnay were both up compared with 2015 and above their model long term averages. Riesling yields were also up on 2015 but close to its long term average.

Growers have reported a relaxing of winery imposed yield limits (yield cap) in the past two seasons as wine companies have sought more supply. This also increased the overall yield of the model.

Prices

The combined average price for all varieties was $1900 per tonne, up 5 percent compared to 2015 and 4 percent above the 10-year average 2006-15.

Sauvignon Blanc's price, at $1805 per tonne, increased 6 percent compared with 2015. However, the model yield includes 5 percent that was surplus to winery imposed yield limits and was sold at low prices in 2016.

Disregarding these sales, the average price for Sauvignon Blanc would have been $1850 per tonne.

Pinot Noir's 2016 price decreased 4 percent compared with 2015 to $3085 per tonne. This is still 2 percent higher than the 10-year average. The high yields of Pinot Noir resulted in some surplus fruit over contracted cap being sold at lower prices.

Expenditure

Model vineyard working expenses increased 7 percent compared with 2015 to $10 445 per hectare. Expenses are now only just below their peak of $10 689 per hectare in 2008. Vineyard working expenses are 19 percent higher than the average of the 10-year period 2006-15.

Expenses have increased in each of the past three seasons. This was due to the need to improve yields after a period of low prices and lower winery imposed yield caps 2010-13 reduced inputs to the minimum.

Total labour expenses increased 9 percent in 2016. This was largely driven by increased crop moderation due to the large crop and increased spraying required to combat powdery mildew.

Pruning costs also increased 6 percent compared with 2015 reflecting higher labour rates and a move away from machine stripping. Weed and pest control chemicals increased 9 percent compared with 2015 due to more spraying and a more diverse choice of chemistry to control powdery mildew. In addition, some growers applied expensive mealy bug control products.

Fertiliser and lime costs were up 8 percent with growers more aware of the nutritional inputs needed in the vineyard to maintain yield.

Irrigation costs (electricity and water) increased in 2016 due to the dry season. Several growers upgraded their irrigation systems in 2016 after the lessons from the previous dry year. This lead to more effective but higher water use in 2016.

Frost protection costs were up for a second year in a row due to a number of frost events in spring.

Fuel costs were down significantly compared with 2015 largely due to lower diesel prices and new survey growers contracting out tractor work.

Overhead costs were up 12 percent compared with 2015. Grape grower levies were up significantly in line with the increased yield.

Financial Result

The record yield and increased price per tonne gave a vineyard profit before tax of $444 700. This is 143 percent up on 2015 and just marginally lower than the record of $449 100 achieved in 2008.

The 2016 profit before tax equates to $14 820 per hectare, higher than the 10-year average of $7815.

Vineyard surplus for re-investment was a record $413 900. The 2006-15 ten-year average was $160 408. However, it is important to note that tax is modelled for the survey and has been calculated as zero for payments in 2016 due to high provisional tax payments in 2015. Tax planning challenges will occur when there is a significant profit variation between years.

Capital expenditure fell on the back of a weak result the previous year. Expenditure on tractors, machinery, vineyard buildings and wind machines all fell. Growers continue to invest in more efficient sprayers.

There was a decrease in new plantings after some development in the previous year. Long–term development looks promising with nurseries reporting strong forward orders. A recent Marlborough Labour Market survey predicting a significant increase in the Marlborough region planted area in the next five years.

Vineyard property values increased 16 percent compared with 2015. The average vineyard value was $190 200 per planted hectare. Growers indicated that performing vineyards in prime areas of the Wairau Plains, are worth as much as $250 000 or more per planted hectare.

Expected financial performance of the marlborough viticulture model in 2017

Growers forecast a model average yield of 13.1 tonnes per hectare in 2017, a 13 percent decrease compared with 2016. This is still 1.8 tonnes above the 10-year average 2006-15. This figure is influenced by the relaxing of yield caps over the past two seasons.

Price per tonne for all varieties is expected to stay at similar levels to 2016. Growers do not expect to have fruit surplus to winery yield caps that would be sold at low prices. Therefore, the overall average prices are expected to increase slightly in 2017 to $1940 per tonne.

Several growers believe vineyards over cropped in 2016 may give below average yields in 2017. This was also seen in 2015 when there was a high yield the previous season. However, conditions at fruit bud initiation and flowering will still be determining factors and growers are not predicting yields to drop to the 2015 level.

The reduced yield aligns with the Plant and Food Research grape yield model which predicts a decrease of 13 percent in 2017 compared with long term averages .

[3] WinePress, April 2016

[4] WinePress, June 2016

Industry Issues and Developments

Seasonal impacts on profitability

The near record profitability in 2016 was driven by excellent yields and higher prices paid for wine grapes compared to 2015.

Yields increased due to the following factors:

- a period of warm weather during flowering flowering for earlier varieties, improving fruit set in some areas
- a warm January to March period with growing degree days up 18 percent on the long term average
- rain events in early January and close to harvest which increased individual berry weight
- vulnerable irrigation schemes did not have to be switched off at critical times due to rain events
- relaxation of yield caps by many wine companies
- a warm dry April ensured a controlled harvest and reduced disease issues

Prices to contract growers improved compared with 2015 due to increased demand by wineries caused by:

- a small crop in 2015
- offshore demand for Marlborough wine
- favourable exchange rate movements, particularly against the US dollar

The large yield increased crop moderation expenses including removing whole canes, especially where growers had laid extra canes after experiencing low yields in 2015.

Increased costs of powdery mildew prevention and control were cited as having a significant impact on working expenses in Marlborough. The sexual stage of powdery mildew, Chasmothecia, has increased the carryover of inoculums between seasons requiring many vineyards to shorten the spray interval to prevent economic losses. This issue is likely to continue in the coming seasons.

Grower morale and business viability

All the growers interviewed reported a positive morale and were cautiously optimistic about their business. However, more than half had concerns about future over supply and its effect on prices and quality. Several commented that fruit surplus to requirement had been sold at knock-down prices during the 2016 vintage. They voiced their concerns about the resulting effects on wine price, quality and 'brand' Marlborough.

The majority of the contract growers in the group reported reasonable to excellent relationships with their wineries. In many cases yield restrictions have been relaxed and are more likely related to 'terroir' potential rather than an across the board yardstick.

The monitored group continues to invest in business changes to improve business viability. This includes purchasing or leasing land of developed vineyards. A recent survey[5] of wine companies in Marlborough found a significant expansion in planted area is planned over the next five years.

Other reported changes to improve business viability include risk mitigation, investment in dams or schemes for water security, debt reduction and staff training.

At an industry meeting in June there were some further points raised around improving future business prospects:

- fixed price contracts for grape growers are becoming more common e.g. for three years ahead
- top grafting less profitable varieties to Sauvignon Blanc
- leveraging Geographic Indications legislation
- timely replanting as the vineyard profile ages
- mechanisation as labour costs and shortages increase

[5] The Marlborough Labour Market Survey, Wine Press, May 2016

Environmental and natural resource management

The 2015/16 growing season started in drought with 2015 ending up the driest year on record for Marlborough. This prompted a 'Dry Season Seminar' in November organised by New Zealand Winegrowers to discuss potential irrigation scheme shut downs and water shortages. By the end of December 2015 Blenheim had only had 26mm of rain since the beginning of October and the situation was serious.

Fortunately, the drought was relieved by timely rain events in January and February but had concentrated the minds of growers on water issues. Six growers in the model are considering investing in alternative water sources such as dams and private schemes. These growers are reliant on water sources that are prone to being shut off due to low river flows. A quarter of the growers in the model already have alternative sources and another quarter with existing consents direct to aquifers do not perceive a need for another source at present.

Growers in Marlborough are aware of the Marlborough District Council's (MDC) proposals for managing future water allocation and use after community meetings in winter 2015. Several growers voiced concerns over the impact on their business in the future. MDC's Marlborough Environment Plan, which includes future water allocation, was notified on 9th June 2016 with submissions being taken up to 1st September 2016.

Five 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. Growers expressed both positive and negative responses regarding the resource consent process.

More than half the group have existing environmental enhancement projects on their properties including native plantings and wetlands. A third of the group expect to implement further projects in the near future.

Two thirds of the group increased inputs to manage powdery mildew in the 2015/16 season by decreasing spraying interval and using a wider range of chemistry. Several growers commented on the need for the region as a whole to coordinate efforts to keep on top of this increasing problem. Poorly managed blocks can constantly re-infect their neighbours.

The area of organic production amongst the existing survey growers is the same as 2015. At the June 2016 Industry meeting, it was stated that there are some increases in organic production area but mainly within existing organic businesses.

Hot topics

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

The predominant issue was around the yield versus quality balance and its relationship to the volume and price of wine presented to the market. A portion of growers in the survey were very concerned about over supply leading to large volumes of low price wine sent to the market.

Several growers argued that price per hectare is a far better payment method than price per tonne as it is an incentive to produce better quality. However, other growers and wineries rely on good yields to keep their businesses viable and believe that they are simply supplying what the market wants – a good volume of reasonable quality wine at a competitive price.

Many growers were dismayed at opportunistic buyers purchasing excess fruit in vintage 2016 at prices up to 75 percent lower than the district average. This fruit was either above contracted yield or rejected by the contracted winery. Several growers were proud to have harvested fruit to the ground despite being offered a deal by these purchasers.

The group acknowledged the success and importance of the Recognised Seasonal Employer (RSE) scheme with one describing it as 'amazing'. There are concerns around future negative changes to the scheme or lack of upward movement in numbers of workers allowed under this scheme. Concerns would be compounded if the number of vineyard workers required in Marlborough increases as forecast in the Marlborough Labour Market survey[6]. Several growers also said that good quality permanent skilled employees are getting harder to find and keep as competition increases for their services.

At the June 2016 Industry meeting, further hot topics were raised:

- concern about biosecurity breaches from overseas pests and diseases e.g. via imported vineyard machinery. In August 2016, New Zealand Winegrower's members are voting whether to join up with a Government and Industry agreement (GIA) for a joint response to biosecurity protection and incursions
- expansion of vineyards into more climatically marginal areas of Marlborough e.g. areas with higher rainfall that could increase disease issues
- increasing resistance to certain herbicides e.g. glyphosate resistant perennial ryegrass – requires costlier alternatives
- varietal mix – need to keep in tune with consumer preference including wine style.

[6] WinePress, April 2016

About the model

Marlborough vineyard benchmarking model

This report is based on data and comments collected in personal interviews with grape growers in Marlborough in May 2016. Model vineyard budgets were prepared using the data collected from these vineyards. Feedback from industry representatives incorporated after a meeting in Marlborough to critique the draft models. Additional industry intelligence and Fruition Horticulture client interactions also informed the supporting commentary.

The model is a continuation of the Viticulture Benchmarking Programme that the Ministry for Primary Industries initiated in 2004. The Programme is now co-funded by the Ministry for Primary Industries and New Zealand Winegrowers.

This model represents the dominant grape-growing region in New Zealand of Marlborough. According to New Zealand Winegrowers' most recent vintage survey, this region accounted for almost 77 percent of the grape harvest in New Zealand. The model is based on a combination of contract grower and winery-operated businesses where the main source of income is derived from grape growing. Smaller lifestyle properties are excluded from the benchmarking programme.

The aim of the model is to typify an average vineyard for the region. Income includes income from grapes, off-vineyard income, new borrowing and other direct vineyard income. Expenditure includes vineyard production costs, debt servicing, leasing, drawings, taxation, development and capital purchases. In 2014 some expense categories were redefined to better reflect vineyard business classifications. These included moving tractor repairs and maintenance from vehicle expenses to repairs and maintenance and moving mechanical stripping from contract machinery work to pruning (and tying down).

From 2014, the addition of new growers, which includes winery-operated vineyards, has impacted on the time series for some items. Caution should be taken when comparing individual expense items between 2013 and 2016, especially other wages, rates, other administration and legal/consultancy.

Profitability in several other New Zealand grape growing regions is also being assessed through the development of gross margins specific to dominant varieties in respective regions.

Financial data in the viticulture model relates to a year-end of 30 June.

Marlborough vineyard model

The Marlborough model remains at 30 producing hectares. For 2016, data was sourced from 38 vineyards compared with 31 vineyards in the previous year. Nine vineyards are located in the Awatere Valley and 29 vineyards in the Wairau Valley. There are 29 contract growers and nine winery-operated vineyards in the monitoring group. Eight of the vineyards are 0– 10 hectares, eight are 10–20 hectares, thirteen are 20–50 hectares and nine are 50 hectares or larger. Sauvignon Blanc is the dominant grape variety in the model, representing 79 percent of the producing area, followed by Pinot Noir, Chardonnay, Pinot Gris and Riesling. Four vineyards out of the 38 are Bio-Gro certified and two others have trial areas of organically grown grapes.

Appendix/tables

Marlborough weather data

	Growing Degree Days[1]			Rainfall (mm)		
Month	**2015[2]**	**2016**	**Long Term Average**	**2015**	**2016**	**Long Term Average**
July	8	7	10	10	35	68
August	11	23	19	12	50	60
September	64	31	58	39	54	49
October	92	116	102	23	6	71
November	154	152	143	17	3	48
December	226	184	215	32	17	51
January	272	272	246	4	69	44
February	208	291	221	15	18	34
March	209	217	194	37	47	34
April	128	110	110	52	26	53
May	67	95	58	20	89	54
June	20	32	18	87	77	69
Total	**1 460**	**1 530**	**1 394**	**349**	**491**	**635**

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

[2] Year refers to year of harvest

Source NIWA (Blenheim)

Marlborough vineyard model grape prices

Year ended 30 June	2006-15 ($/t)	2011-15 ($/t)	2015 ($/t)	2016 ($/t)	2017 budget ($/t)
Sauvignon Blanc	1 765	1 490	1 710	1 805	1 840
Pinot Noir – Table	3 030	2 980	3 220	3 085	3 210
Pinot Gris	1 815	1 780	1 830	1 885	1 915
Chardonnay – Mendoza and Clone 15	1 955	1 950	2 200	2 130	2 250
Chardonnay – all other clones	1 785	1 715	1 830	2 000	1 910
Riesling	1 705	1 620	1 785	1 775	1 775
Weighted average	**1 830**	**1 605**	**1 810**	**1 900**	**1 940**

Marlborough vineyard model production and income details for 2016

Grape variety	Area (ha)	Production per hectare (t/ha)	Total production (t)	Gross yield (%)	Brix (%)	Return ($/t)	Revenue ($)
Sauvignon Blanc	23.0	16.5	380	84%	21.6	1 805	685 000
Pinot Noir – Table	3.0	8.6	26	6%	23.2	3 085	79 600
Pinot Gris	1.5	11.8	18	4%	22.5	1 885	33 400
Chardonnay – Mendoza & Clone 15	1.5	10.6	16	4%	22.0	2 130	33 900
Chardonnay – all other clones	0.5	14.0	7	2%	19.2	2 000	14 000
Riesling	0.5	11.5	6	1%	20.9	1 775	10 200
Total/average	**30.0**	**15.1**	**452**	**100%**		**1 900**	**856 100**

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

Marlborough vineyard model budget

	2015	2016
Total area	33 ha	33.0 ha
Planted area	30 ha	30.0 ha
Producing area	30 ha	30.0 ha
Total crop (tonne)	**324**	**452**
% Change		**+39%**
avge vines per planted hectare	**2 180**	**2 180**

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	2015		2016			
Revenue	Whole Vineyard ($)	**% change**	Whole Vineyard ($)	producing hectare ($)	per tonne gross ($)	per vine ($)
Income from grapes	587 300	46%	856 100	28 535	1 895	13.10
Other direct vineyard income	4 700		12 700	425	28	0.19
+ **Net cash income**	**592 000**	**47%**	**868 800**	**28 960**	**1 924**	**13.29**
+ **Vineyard working** expenses	**291 600**	**7%**	**313 300**	**10 445**	**694**	**4.79**
= **Cash operating surplus**	**300 400**	**85%**	**555 500**	**18 515**	**1 230**	**8.50**
– Interest	65 000	-6%	61 200	2 040	136	0.94
Rent &/or leases	8 200	0%	8 200	275	18	0.13
– Depreciation	44 000	-6%	41 400	1 380	92	0.63
– Net nonfruit cash income	0		0	0	0	0.00
– **Vineyard profit before tax**	**183 200**	**143%**	**444 700**	**14 820**	**985**	**6.80**
+ **Tax**	**129 500**	**-100%**	**0**	**0**	**0**	**0.00**
= **Vineyard profit after tax**	**53 700**	**728%**	**444 700**	**14 825**	**985**	**6.80**
– **Allocation of funds**						
= Add back depreciation	44 000	-6%	41 400	1 380	92	0.63
Drawings/living expenses[1]	61 100	18%	72 200	2 405	160	1.10
+ Vineyard surplus for reinvestment[2]	36 600	1031%	413 900	13 795	916	6.33
– **Reinvestment**						
Net capital purchases	30 900	-34%	20 400	680	45	0.31
Development	50 900	-83%	8 400	280	19	0.13
– Principal repayments	47 900	-5%	45 500	1 515	101	0.70
– **Vineyard cash surplus**/deficit	**-93 100**	**-465%**	**339 600**	**11 320**	**752**	**5.19**
– **Other cash sources**						
= Indirect cash income	24 000	13%	27 000	900	60	0.41
New borrowings	41 880		0	0	0	0.00
+ Introduced funds	0		0	0	0	0.00
+ **Net cash position**	**-27 220**	**-1 447%**	**366 600**	**12 220**	**812**	**5.61**
+ **Assets & liabilities**						
= Land and building[3]	4 927 830	16%	5 706 630	190 200	12 635	87.29
Plant and machinery	145 200	-6%	136 600	4 555	302	2.09
+ **Total vineyard assets** (closing)	**5 073 030**	**15%**	**5 843 230**	**194 775**	**12 938**	**89.38**
+ **Total vineyard liabilities** (closing)	**1 073 300**	**-4%**	**1 027 800**	**34 260**	**2 276**	**15.72**
= **Total equity**	**3 999 730**	**20%**		**160 515**	**10 662**	**73.66**

Marlborough vineyard model expenditure

Year ending 30 June	2015		2016			
Vineyard working expenses	Whole Vineyard ($)	**% change**	Whole Vineyard ($)	producing hectare ($)	per tonne gross ($)	per vine ($)
Hand harvesting	6 400	9%	7 000	233	15	0.11
Pruning (and tying down)	66 800	6%	70 700	2 357	157	1.08
Canopy/Crop management1	34 800	19%	41 300	1 377	91	0.63
Other wages	47 500	7%	50 600	1 687	112	0.77
ACC – employees	800	0%	800	27	2	0.01
Total labour expenses	**156 300**	**9%**	**170 400**	**5 680**	**377**	**2.61**
Weed & pest control	25 600	9%	27 900	930	62	0.43
Fertiliser & lime	7 500	8%	8 100	270	18	0.12
Electricity	6 900	16%	8 000	267	18	0.12
Vehicle	2 300	–13%	2 000	67	4	0.03
Fuel	7 300	–25%	5 500	183	12	0.08
Repairs & maintenance	23 800	3%	24 600	820	54	0.38
General	4 100	7%	4 400	147	10	0.07
Frost protection	3 400	0%	3 400	113	8	0.05
Contract machinery work	2 700	7%	2 900	97	6	0.04
Machine harvesting	18 900	3%	19 500	650	43	0.30
Total other working expenses	**102 500**	**4%**	**106 300**	**3 545**	**235**	**1.63**
Rates	6 700	13%	7 600	253	17	0.12
Water rates	2 700	11%	3 000	100	7	0.05
General insurance	3 800	3%	3 900	130	9	0.06
Crop insurance	0		0	0	0	0.00
ACC – owners	6 100	–13%	5 300	177	12	0.08
Communication	1 400	14%	1 600	53	4	0.02
Accountancy	3 700	11%	4 100	137	9	0.06
Legal & consultancy	1 900	32%	2 500	83	6	0.04
Levies & subscriptions	4 500	40%	6 300	210	14	0.10
Other administration	2 000	15%	2 300	77	5	0.04
Total overhead expenses	**32 800**	**12%**	**36 600**	**1 220**	**81**	**0.56**
Total vineyard working expenses	**291 600**	**7%**	**313 300**	**10 445**	**694**	**4.79**
Wages of management	75 000	0%	75 000	2 500	166	1.15
Interest	65 000	–6%	65 000	2 040	136	0.94
Rent &/or leases	8 200	0%	8 200	275	18	0.13
Depreciation	44 000	–6%	41 400	1 380	92	0.63
	192 200	–3%	185 800	6 195	411	2.84
Total vineyard operating expenses	**483 800**	3%	**499 100**	**16 635**	**1 105**	**7.63**
Calculated ratios						
Economic Vineyard Surplus (EVS)[1]	**181 400**		**439 100**	**14 635**	**972**	**6.72**

Year ending 30 June	2015		2016
	Whole Vineyard		Whole Vineyard
Vineyard working expenditure/NCI[2]	49%		36%
EVS/Total vineyard assets	3.6%		7.5%
EVS less interest & lease/equity	2.7%		7.7%
Interest+rent+lease/NCI	12.4%		8.0%
EVS/NCI	30.6%		50.5%
EBIT[3] ($)	248 200		505 900
EBIT/Total Capital	4.9%		8.7%
EBIT/Total Equity	6.2%		10.5%

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 Nick Dalgety, Policy & Trade, MPI
nick.dalgety@mpi.govt.nz I 03 545 9472


NEW ZEALAND WINE
PURE DISCOVERY
nzwine.com