

# BAY OF PLENTY KIWIFRUIT



THIS REPORT CONTAINS THE KEY RESULTS FROM THE MINISTRY OF AGRICULTURE AND FORESTRY'S 2010 KIWIFRUIT MONITORING PROGRAMME.

## KEY POINTS

- › Production per hectare in the model decreased in 2009/10 from the record high levels achieved in 2008/09, to 8350 green trays per hectare (down 2 percent), and to 10 730 gold trays per hectare (down 5 percent). Difficult climatic conditions during the 2010 growing season are expected to reduce production further in 2010/11 by similar percentages for both green and gold kiwifruit.
- › Net cash income on the model increased 10 percent in 2009/10 to \$208 600, driven by the 37 percent increase in the orchard gate return (OGR) per tray for gold kiwifruit, as a result of strong market demand and improved exchange rates with the Yen. The green OGR per tray improved slightly during a period of generally depressed fruit and vegetable prices in international markets.
- › Orchard working expenses in the model increased 2 percent in 2009/10 to \$141 800, driven by a 4 percent increase in total labour expenditure as a result of the minimum wage increase and additional thinning on the 2010 crop. Orchard working expenses have increased 15 percent since 2006/07 and are expected to stabilise in 2010/11.
- › The model more than doubled orchard profit before tax in 2009/10 to \$37 120 and achieved a \$17 450 cash surplus, marking a return to positive cash-flows. The profitability of the model is expected to be similar in 2010/11 and growers are optimistic that orchard profitability will continue to improve in the coming years.

»» TABLE 1: KEY PARAMETERS, FINANCIAL RESULTS AND BUDGET FOR THE BAY OF PLENTY KIWIFRUIT ORCHARD MODEL

YEAR ENDED 31 MARCH	2006/07	2007/08	2008/09	2009/10	2010/11 BUDGET
Total effective area (ha) <sup>1</sup>	5.0	5.0	5.0	5.0	5.0
<b>ZESPRI™ GREEN</b>					
Production (export trays/ha) <sup>2</sup>	7 270	8 060	8 520	8 350	8 200
Total production (export trays)	32 715	32 240	34 080	33 400	32 800
Total revenue (OGR <sup>3</sup> \$/tray)	4.09	3.11	3.68	3.75	3.80
Revenue before 31 March <sup>4</sup> (\$/tray)	3.62	2.86	3.40	3.41	3.46
Revenue after 31 March (\$/tray)	0.47	0.25	0.28	0.34	0.34
<b>ZESPRI™ GOLD</b>					
Production (export trays/ha)	9 480	10 360	11 260	10 730	10 200
Total production (export trays)	4 740	10 360	11 260	10 730	10 200
Total revenue (OGR \$/tray)	5.18	4.45	5.41	7.41	7.50
Revenue before 31 March (\$/tray)	4.73	4.15	5.00	7.06	7.15
Revenue after 31 March (\$/tray)	0.45	0.30	0.41	0.35	0.35
Net cash income (\$)	162 900	157 900	189 400	208 580	205 830
Orchard working expenses (\$)	123 700	116 600	139 500	141 800	139 680
Orchard profit before tax (\$)	9 400	7 300	15 200	37 120	36 310
Orchard surplus for reinvestment <sup>5</sup> (\$)	-17 700	-26 600	-23 800	-1 250	-2 460

### Notes

Figures may not add to the totals due to rounding.

1 The model orchard is a mature Bay of Plenty orchard planted with 4 hectares of Hayward (ZESPRI™ GREEN) and 1 hectare of Hort16A (ZESPRI™ GOLD). The orchard is not organic.

2 The kiwifruit crop is harvested from April to June, so the 2009 crop is recorded in the 2009/10 year. A tray contains approximately 3.6 kilograms of kiwifruit.

3 Orchard gate return equals the fruit return paid by ZESPRI less fruit loss and post-harvest costs plus Class 2 income and rebates.

4 Financial data relates to the year ending 31 March. Kiwifruit income spans two financial years, with the residual payment for each crop occurring in the next financial year.

5 Orchard surplus for reinvestment is the cash available from the orchard business, after meeting living costs, which is available for investment on the orchard or for principal repayments. It is calculated as discretionary cash less off-orchard income and drawings.



»» TABLE 2: BAY OF PLENTY KIWIFRUIT ORCHARD MODEL BUDGET

	2008/09	2009/10			2010/11 BUDGET		
	WHOLE ORCHARD (\$)	WHOLE ORCHARD (\$)	PER HA (\$)	PER CLASS 1 TRAY (\$)	WHOLE ORCHARD (\$)	PER HA (\$)	PER CLASS 1 TRAY (\$)
<b>REVENUE</b>							
Green - OGR <sup>1</sup> progress	115 900	113 894	28 474	3.41	113 488	28 372	3.46
- previous crop final	8 000	9 542	2 386	0.28	11 356	2 839	0.34
Gold - OGR progress	56 300	75 754	75 754	7.06	72 930	72 930	7.15
- previous crop final	3 100	4 617	4 617	0.41	3 756	3 756	0.35
Other fruit crops	3 500	3 000	600	0.07	2 500	500	0.06
Other orchard income	2 500	1 770	354	0.04	1 800	360	0.04
<b>Net cash income</b>	<b>189 400</b>	<b>208 580</b>	<b>41 720</b>	<b>4.73</b>	<b>205 830</b>	<b>41 170</b>	<b>4.79</b>
<b>Orchard working expenses</b>	<b>139 500</b>	<b>141 800</b>	<b>28 360</b>	<b>3.21</b>	<b>139 680</b>	<b>27 940</b>	<b>3.25</b>
<b>Cash operating surplus</b>	<b>49 900</b>	<b>66 780</b>	<b>13 356</b>	<b>1.51</b>	<b>66 150</b>	<b>13 230</b>	<b>1.54</b>
Interest	23 900	18 760	3 752	0.43	19 940	3 988	0.46
Rent and/or leases	0	0	0	0.00	0	0	0.00
Depreciation	10 800	10 900	2 180	0.25	9 900	1 980	0.23
<b>Orchard profit before tax</b>	<b>15 200</b>	<b>37 120</b>	<b>7 424</b>	<b>0.84</b>	<b>36 310</b>	<b>7 260</b>	<b>0.84</b>
Tax	800	5 400	1 080	0.12	4 400	880	0.10
<b>Orchard profit after tax</b>	<b>14 400</b>	<b>31 720</b>	<b>6 344</b>	<b>0.72</b>	<b>31 910</b>	<b>6 380</b>	<b>0.74</b>
Add back depreciation	10 800	10 900	2 180	0.25	9 900	1 980	0.23
Net non-fruit cash income	9 800	11 830	2 366	0.27	9 230	1 846	0.21
Off-orchard cash income	19 500	28 700	5 740	0.65	28 600	5 720	0.67
<b>Discretionary cash</b>	<b>54 500</b>	<b>83 150</b>	<b>16 630</b>	<b>1.88</b>	<b>79 640</b>	<b>15 930</b>	<b>1.85</b>
<b>APPLIED TO:</b>							
Net capital purchases	4 400	10 000	2 000	0.23	3 500	700	0.08
Development	600	0	0	0.00	0	0	0.00
Drawings	58 800	55 700	11 140	1.26	53 500	10 700	1.24
Principal repayments	0	0	0	0.00	0	0	0.00
New borrowings	0	0	0	0.00	0	0	0.00
Introduced funds	0	0	0	0.00	0	0	0.00
<b>Cash surplus/deficit</b>	<b>-9 200</b>	<b>17 450</b>	<b>3 490</b>	<b>0.40</b>	<b>22 640</b>	<b>4 530</b>	<b>0.53</b>
<b>Orchard surplus for reinvestment<sup>2</sup></b>	<b>-23 800</b>	<b>-1 250</b>	<b>-250</b>	<b>-0.03</b>	<b>-2 460</b>	<b>-490</b>	<b>-0.06</b>
<b>ASSETS AND LIABILITIES</b>							
Land and building (opening) <sup>3</sup>	1 475 000	1 375 000	275 000	31.16	1 435 000	287 000	33.37
Plant and machinery (opening)	62 100	57 000	11 400	1.29	56 950	11 390	1.32
Orchard related investments (opening)	65 000	62 400	12 480	1.41	66 300	13 260	1.54
<b>Total orchard assets (opening)</b>	<b>1 602 100</b>	<b>1 494 400</b>	<b>298 880</b>	<b>33.86</b>	<b>1 558 250</b>	<b>311 650</b>	<b>36.24</b>
<b>Total liabilities (opening)</b>	<b>221 900</b>	<b>221 870</b>	<b>44 370</b>	<b>5.03</b>	<b>235 460</b>	<b>47 090</b>	<b>5.48</b>
<b>Total equity</b>	<b>1 380 200</b>	<b>1 272 530</b>	<b>254 510</b>	<b>28.84</b>	<b>1 322 790</b>	<b>264 560</b>	<b>30.76</b>

**Notes**

Figures may not add to the totals due to rounding.

1 Orchard gate return.

2 Orchard surplus for reinvestment is calculated as follows: discretionary cash less off-orchard income and drawings.

3 Land and building asset value includes the value of owned land, vines and supports, other improvements, orchard buildings and dwellings on the property.

»» TABLE 3: BAY OF PLENTY KIWIFRUIT ORCHARD MODEL EXPENDITURE

	2008/09	2009/10			2010/11 BUDGET		
	WHOLE ORCHARD (\$)	WHOLE ORCHARD (\$)	PER HA (\$)	PER CLASS 1 TRAY (\$)	WHOLE ORCHARD (\$)	PER HA (\$)	PER CLASS 1 TRAY (\$)
<b>ORCHARD WORKING EXPENSES</b>							
Pruning wages	...	45 450	9 090	1.03	44 500	8 900	1.03
Thinning wages	...	11 350	2 270	0.26	10 250	2 050	0.24
Other wages	55 100	1 650	330	0.04	1 650	330	0.04
Picking wages	17 100	17 055	3 411	0.39	16 580	3 316	0.39
ACC - employees	0	0	0	0.00	0	0	0.00
<b>Total labour expenses</b>	<b>72 300</b>	<b>75 500</b>	<b>15 100</b>	<b>1.71</b>	<b>72 980</b>	<b>14 600</b>	<b>1.70</b>
Weed and pest control	7 000	8 900	1 780	0.20	9 000	1 800	0.21
Pollination	10 500	7 600	1 520	0.17	7 500	1 500	0.17
Fertiliser and lime	9 600	9 650	1 930	0.22	9 500	1 900	0.22
Electricity	1 100	1 150	230	0.03	1 300	260	0.03
Vehicle (including fuel)	7 700	6 950	1 390	0.16	7 100	1 420	0.17
Repairs and maintenance	9 600	9 900	1 980	0.22	10 000	2 000	0.23
General	3 200	4 250	850	0.10	4 200	840	0.10
Frost protection	0	0	0	0.00	0	0	0.00
Contract machine work	1 400	1 600	320	0.04	1 600	320	0.04
<b>Total other working expenses</b>	<b>50 200</b>	<b>50 000</b>	<b>10 000</b>	<b>1.13</b>	<b>50 200</b>	<b>10 040</b>	<b>1.17</b>
Rates	4 000	4 200	840	0.10	4 400	880	0.10
Insurance	2 300	2 000	400	0.05	2 000	400	0.05
ACC - owners	1 500	1 600	320	0.04	1 600	320	0.04
Communication	2 400	2 200	440	0.05	2 200	440	0.05
Accountancy	3 200	3 000	600	0.07	3 000	600	0.07
Legal and consultancy	1 200	1 200	240	0.03	1 200	240	0.03
Levies and subscriptions	600	400	80	0.01	400	80	0.01
Other administration	1 700	1 700	340	0.04	1 700	340	0.04
<b>Total overhead expenses</b>	<b>17 000</b>	<b>16 300</b>	<b>3 260</b>	<b>0.37</b>	<b>16 500</b>	<b>3 300</b>	<b>0.38</b>
<b>Total orchard working expenses</b>	<b>139 500</b>	<b>141 800</b>	<b>28 360</b>	<b>3.21</b>	<b>139 680</b>	<b>27 940</b>	<b>3.25</b>
<b>CALCULATED RATIOS</b>							
Economic orchard surplus (EOS) <sup>1</sup>	-7 900	9 950	1 990	0.23	9 650	1 930	0.22
Orchard working expenses/NCI <sup>2</sup>	74%	68%			68%		
EOS/total orchard assets	-0.5%	0.7%			0.6%		
EOS less interest and lease/equity	-2.3%	-0.7%			-0.8%		
Interest+rent+lease/NCI	12.6%	9.0%			9.7%		
EOS/NCI	-4.2%	4.8%			4.7%		
Wages of management	47 000	45 950	9 190	1.04	46 600	9 320	1.08

**Notes**

Figures may not add to the totals due to rounding.

<sup>1</sup> EOS (or earnings before interest and tax) is calculated as follows: net cash income less orchard working expenses less depreciation less wages of management (WOM). WOM is calculated as follows: \$31 000 allowance for labour input plus 1 percent of opening total orchard assets to a maximum of \$75 000.

<sup>2</sup> Net cash income.

**Symbol**

... Not available.

## FINANCIAL PERFORMANCE OF THE BAY OF PLENTY KIWIFRUIT ORCHARD MODEL IN 2009/10

The Bay of Plenty kiwifruit orchard model profit before tax more than doubled in 2009/10 to \$37 120, driven by higher returns for gold kiwifruit.



### REVENUE INCREASE DRIVEN BY GOLD RETURNS

The increase in OGR for gold kiwifruit drove up net cash income 10 percent on the model to \$208 600 in 2009/10.

### YIELDS DECREASED SLIGHTLY

Flower counts in spring 2008 indicated the 2009 green kiwifruit crop would be substantial with a risk of producing too many small sized fruit. Growers responded by thinning excess flowers and small fruit to enhance fruit size at harvest. Harvest in May 2009 was marred by a severe hailstorm in the Bay of Plenty, significantly impacting some un-harvested orchards, and reducing total national production 2 percent.

Yield per hectare in the model decreased slightly in 2009/10 from record high levels achieved in 2008/09. Green kiwifruit production on the model decreased 2 percent to 8350 trays per hectare, and production from the hectare of gold kiwifruit decreased 5 percent to 10 730 trays.

### EXPORT RETURNS UP

New Zealand kiwifruit export returns increased 5 percent, reaching \$1 billion free on board for the first time, for the year ended 31 March 2010. These higher returns were driven by a very early start to the marketing season, exchange rate gains with the Yen and the strong demand for gold kiwifruit.

### GROWER PRICES STABILISED

The OGR is the price growers receive for their fruit after deduction of all costs occurring after the crop is picked, such as marketing, packing, fruit loss and shipping costs. The average OGR per tray for green kiwifruit stabilised in 2009/10 and although growers are seeking higher green returns than are currently being achieved, they were pleased with this result given the economic downturn in international markets. The OGR per tray increased significantly for gold kiwifruit, driven by very strong demand in all markets and improved exchange rates with the Yen. The OGR per tray for organic kiwifruit weakened as a result of a larger crop and softer market demand for organic produce during the economic downturn.

The model is using a Bay of Plenty derived green OGR of \$3.75 per tray, and gold OGR of \$7.41 per tray.

National average industry OGR per tray for the 2009 crop were:

- › green: \$3.70 per tray (0.5 percent higher than the previous season);
- › organic green: \$5.67 per tray (10 percent lower);
- › gold and organic gold: \$7.73 per tray (43 percent higher).

Individual grower's OGR per tray varies considerably around the average due to individual incentive payments for fruit size, fruit taste, fruit keeping quality, market access and early season harvest.

### POST-HARVEST COSTS

The cost of grading, packing, packaging and storing kiwifruit is deducted before growers receive their kiwifruit return. Most of the cost items are fixed expenses, with only small variations amongst monitored orchards. The cost of fruit loss is the key variable, and growers use this as an important measure of pack-house performance.

»» TABLE 4: BAY OF PLENTY KIWIFRUIT ORCHARD MODEL POST-HARVEST COSTS

YEAR ENDED 31 MARCH 2010	PER CLASS 1 TRAY (\$)	
	GREEN	GOLD
Freight (orchard to packhouse)	0.06	
Packing and packaging	1.74	2.26
Pack-type differential	0.20	0.80
Cool storage (includes freight to port)	0.79	
Condition checking and repacking	0.32	
Administration	0.03	
<b>Total post-harvest costs</b>	<b>3.14</b>	<b>4.26</b>

### QUALITY GENERALLY IMPROVED

Fruit loss percentages decreased in 2009/10 for green and gold kiwifruit, but increased slightly for green organic kiwifruit. Growers impacted by the hail event generally experienced higher fruit loss during storage. The fruit loss percentages for the 2009 national crop were:

- › green: 4.8 percent (6.4 percent in 2008/09);
- › organic green: 3.8 percent (3.3 percent);
- › gold: 3.7 percent (4.4 percent).

### OTHER INCOME

Income from other fruit crops, often a small area of avocados, and sundry income such as renting out tractors during harvest, totalled \$4770 in 2009/10, contributing 2 percent of the model's revenue.

Returns on 13 000 ZESPRI shares provided a cash dividend of \$11 830 (91 cents per share) for the model, which is recorded as "net non-fruit cash income" in Table 2.

### EXPENDITURE STABLE

Orchard working expenses in the model increased 2 percent in 2009/10 to \$141 800, driven by an increase in both the cost and amount of labour used. On a per tray basis, working expenses increased 4 percent to \$3.21 per tray, driven by the reduced yield.

Total labour expenditure increased 4 percent in 2009/10 to \$75 500. This was due to the increased minimum wage rate and additional thinning required on the 2010 crop to manage seasonal conditions. Picking costs in 2009/10 averaged \$0.35 per tray for green kiwifruit and \$0.50 per tray for gold kiwifruit.

Other working expenses remained stable at approximately \$10 000 per hectare with increased expenditure in some areas offset by savings elsewhere.

### NET RESULT IMPROVES SIGNIFICANTLY

The cash operating surplus in the model increased 34 percent in 2009/10 to \$66 800, the highest operating surplus achieved in recent years. Debt servicing costs in the model decreased 22 percent in 2009/10 to \$18 800 as a result of the term-loan interest rate reducing to 7.5 percent, helping to deliver an orchard profit before tax of \$37 120, more than double that of last year. The improved profitability has increased the tax bill significantly to \$5400 in 2009/10, from very low levels in recent years.

Expenditure on capital items increased by \$6600 to \$10 000 in response to the improved profitability, providing growers the opportunity to replenish worn capital items.

Off-orchard income in the model increased 47 percent in 2009/10 to \$28 700, a level similar to 2007/08. Off-orchard income makes a key contribution to meeting growers' living costs and is sourced from investment income, dividends from post-harvest entities, wages and salaries.

The model has a \$17 450 cash surplus in 2009/10, marking a return to positive cash-flows. The model provided an economic orchard surplus of \$9950 in 2009/10, returning 0.7 percent on total orchard assets.

The value of the model land and buildings as of 1 April 2010 has increased 4 percent over the previous year to \$1.435 million, reaching a point mid-way between the values of the past two years. This improvement in orchard values is being driven by stronger demand for green orchards in anticipation of the availability of new kiwifruit varieties.



## BUDGET FINANCIAL PERFORMANCE OF THE BAY OF PLENTY KIWIFRUIT ORCHARD MODEL IN 2010/11

Orchard profit before tax is expected to reduce 2 percent to \$36 310 in 2010/11 as a result of a modest reduction in the yield of both green and gold kiwifruit.

### YIELDS EXPECTED TO FALL BUT REVENUE STABLE

Net cash income in the model is anticipated to reduce 1 percent in 2010/11 to \$205 800, due to the lower yield expected.

ZESPRI released an indicative range of gross returns for the 2010/11 season which signal a similar return to the 2009/10 season for green, organic green and gold kiwifruit.

Harvest was near completion at the time of compiling this report in June 2010. The climatic conditions during the 2010 growing season are expected to reduce the productivity of kiwifruit in 2010/11. Green kiwifruit production is expected to reduce 2 percent in 2010/11 to 8200 trays per hectare and gold kiwifruit production is expected to reduce 5 percent to 10 200 trays per hectare.

The cold winter in 2009 induced good bud break, but conditions during pollination in spring 2009 were difficult; August was warmer than average whilst October was much colder (refer to Table 6 for monthly rainfall and growing degree day information). Orchards growing gold kiwifruit and those at higher altitudes were particularly affected. Some orchards were affected by a poor overlap of male and female flowering, flower and fruitlet drop and cold wet weather during flowering. The conditions for beekeeping were difficult and there was a shortage of artificial pollen to supplement beehives.

Rainfall was 40 percent of normal levels for the 6 months to April 2010, resulting in a significant period of drought in the Bay of Plenty. Subsequently, the dry matter level of the kiwifruit crop is high, which has resulted in a sweet flavoured 2010 crop receiving a good response from export markets.

The difficult climatic conditions resulted in a higher proportion than usual of misshapen and smaller sized fruit. Some orchards selectively picked their largest fruit early in the harvest period, rather than picking their whole crop at once as is usual. Fine weather during the main harvest period from April to May enabled orderly picking and early shipping to export markets.

Levels of fruit rejected as a result of sooty mould have been much higher than usual during the 2010 harvest. Sooty mould grows on excretions from passion vine hopper and cicada insects, which have been more prominent during the drought.

## EXPENDITURE STABLE

Orchard working expenses for the model are expected to decrease 1 percent in 2010/11 to \$139 700, due to a budgeted 3 percent reduction in labour expenses assuming typical climatic conditions.

## NET RESULT SIMILAR

The model's profitability in 2010/11 is expected to be similar to the 2009/10 season, with a budgeted cash operating surplus of \$66 150 and profit before tax of \$36 310 (down 2 percent). The cash surplus is expected to increase 30 percent to \$22 640 influenced in part by a budgeted reduction in net capital purchases.

»» TABLE 5: BAY OF PLENTY WEATHER DATA

MONTH	RAINFALL (mm)			GROWING DEGREE DAYS <sup>1</sup> (GDD)		
	2008/09	2009/10	AVERAGE	2008/09	2009/10	AVERAGE
June	209	230	143	29	19	29
July	271	151	164	24	11	20
August	200	200	158	28	53	25
September	89	103	126	76	68	61
October	114	148	143	108	82	104
November	71	12	110	149	157	146
December	121	60	129	226	190	214
January	32	75	106	274	260	257
February	304	36	110	270	285	246
March	325	19	132	202	235	219
April	130	84	142	130	156	139
May	82	311	138	50	91	77
<b>Total</b>	<b>1 965</b>	<b>1 429</b>	<b>1 600</b>	<b>1 566</b>	<b>1 607</b>	<b>1 538</b>

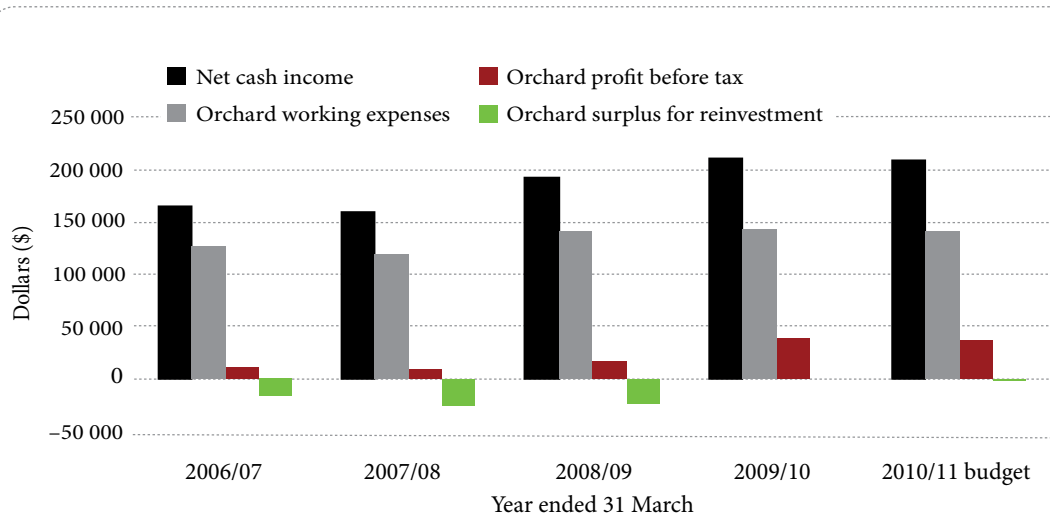
**Note**

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 (usually 10 degrees centigrade). They help to predict the date that a flower will bloom or a crop reach maturity.

**Source**

NIWA (Te Puke).

»» FIGURE 1: BAY OF PLENTY KIWIFRUIT ORCHARD MODEL PROFITABILITY TRENDS



## INDUSTRY ISSUES AND DEVELOPMENTS

### GROWER MORALE AND BUSINESS VIABILITY PLANS

The kiwifruit industry has largely been able to mitigate the impacts of the global economic downturn. Returns for green kiwifruit in 2009/10 were better than the low returns from the 2007/08 year and growers are confident that strong, coordinated marketing of their fruit will continue to improve returns. Gold kiwifruit growers are extremely pleased with their returns in 2009/10, which are the highest since significant volumes were first exported.



Returns from growing kiwifruit vary significantly between orchards, depending on yield and the individual OGR per tray. Data is presented in Tables 6 and 7 showing the variability of net orchard surplus per hectare amongst Bay of Plenty orchards in 2009/10. The net orchard surplus measures the difference between on-orchard income and on-orchard expenditure. The quartile yield and OGR per tray are interdependent as they are derived from the distribution of OGR per hectare across the Bay of Plenty.

The model produced a net orchard surplus of \$6700 per hectare for green kiwifruit and \$52 500 per hectare for gold kiwifruit in 2009/10.

The difference in performance between upper and lower quartiles is more influenced by yield than by the OGR per tray. Orchards in the upper performance quartile have 47 percent higher yields for green kiwifruit and 53 percent higher yields for gold kiwifruit, compared with the lower performance quartile. The OGR per tray is less influential; there is a 17 percent difference in OGR per tray between the upper and lower quartiles for green kiwifruit, and 8 percent for gold kiwifruit.

Hence, growers are focussing on productivity improvements through attention to detail for practices such as pruning, thinning, pollination, trunk girdling and the strategic use of tools such as shelter cloths above and below vines.

### KIWIFRUIT BREEDING

The success of the ZESPRI™ GOLD variety has stimulated interest in new kiwifruit varieties world-wide and growers believe new varieties will have a significant role in the continued growth of the kiwifruit industry. In June 2010, ZESPRI announced the commercialisation of three new kiwifruit varieties; these include two gold-fleshed varieties and one sweet green-fleshed variety. There are also other proprietary kiwifruit varieties available to growers. Growers believe that involvement in successful new varieties that expand the kiwifruit share of the fresh-fruit market will enhance orchard revenue.

The Foundation for Research, Science and Technology, which invests in research on behalf of the Government, recently committed a further \$15.2 million over seven years, to a joint \$36.7 million research partnership between Plant & Food Research and ZESPRI. This will expand the world's largest kiwifruit breeding programme, which currently consists of 75 000 seedlings and 52 hectares of orchard land.

### GROWER RESPONSE TO INPUT PRICE CHANGES AND SHORTAGES

Growers have prioritised spending on inputs that directly relate to production and have little ability to reduce production costs.

The economic downturn has increased the availability and quality of local workers as noted in 2009. An additional 1200 New Zealanders were employed during the 2010 harvest and workers from the Recognised Seasonal Employment (RSE) scheme reduced to less than 15 percent of the workforce. Growers and post-harvest entities report that RSE workers have helped lift industry productivity.



## ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT

Growers recognise the importance of environmental sustainability in marketing their kiwifruit and support programmes aimed at evaluating or reducing the environmental impacts of growing kiwifruit. Sustainable practices widely undertaken by growers include returning mulched vine and shelter prunings to the soil, low use of pesticides and the preservation of neighbouring bush-gully areas.

»»» TABLE 6: VARIABILITY OF ZESPRI™ GREEN NET ORCHARD SURPLUS<sup>1</sup> (\$ PER HECTARE) IN THE BAY OF PLENTY

		OGR <sup>2</sup> \$/TRAY					
		MEAN	UPPER QUARTILE	MEDIAN	LOWER QUARTILE		
TRAYS PRODUCED PER HECTARE	MEAN	8 350	6 701	3.75	3.86	3.63	3.30
	UPPER QUARTILE	10 142	13 909			11 577	8 230
	MEDIAN	8 535	8 269			6 306	3 489
	LOWER QUARTILE	6 880	2 460			877	-1 393

**Notes**  
 1 Net orchard surplus is calculated as follows: total OGR per hectare less on orchard costs (pruning, thinning, other wages, picking cost per tray and other working expenses). The cost of picking is the only dynamic variable in this calculation.  
 2 Orchard gate return equals the fruit return paid by ZESPRI less fruit loss and post-harvest costs plus Class 2 income and rebates.

**Source**  
 MAF and Zespri International Limited.

»»» TABLE 7: VARIABILITY OF ZESPRI™ GOLD NET ORCHARD SURPLUS<sup>1</sup> (\$ PER HECTARE) IN THE BAY OF PLENTY

		OGR <sup>2</sup> \$/TRAY					
		MEAN	UPPER QUARTILE	MEDIAN	LOWER QUARTILE		
TRAYS PRODUCED PER HECTARE	MEAN	10 730	52 455	7.41	7.60	7.15	7.03
	UPPER QUARTILE	13 295	72 706			66 723	65 127
	MEDIAN	11 181	57 696			52 665	51 323
	LOWER QUARTILE	8 681	39 946			36 040	34 998

**Notes**  
 1 Net orchard surplus is calculated as follows: total OGR per hectare less on orchard costs (pruning, thinning, other wages, picking cost per tray and other working expenses). The cost of picking is the only dynamic variable in this calculation.  
 2 Orchard gate return equals the fruit return paid by ZESPRI less fruit loss and post-harvest costs plus Class 2 income and rebates.

**Source**  
 MAF and Zespri International Limited.

## INFORMATION ABOUT THE MODEL

The kiwifruit orchard model represents kiwifruit orchards in the Bay of Plenty, the growing region that produces around 80 percent of the New Zealand kiwifruit crop. The model budget represents an established owner-operator orchard. The model has 4 hectares of Hayward (ZESPRI™ GREEN) and 1 hectare of Hort16A (ZESPRI™ GOLD). The model is created using data collected from 17 orchards located from Opotiki to north of Katikati, and information from a wide cross-section of agribusiness representatives.

Financial data relates to the year ending 31 March. Kiwifruit income spans two financial years, with the residual payment for each crop occurring in the next financial year. For example, final payments on the crop harvested in May 2008 occur in the 2009/10 budget year.

The aim of the model is to typify an average kiwifruit orchard for the region. Budget figures are averaged from the contributing orchards and adjusted to represent a real orchard. Income figures include income from kiwifruit, off-orchard income, new borrowing, and other cash income. Expenditure figures include costs of production, debt, leasing, drawings, capital purchases, and development.

For more information on this model contact: [Tony.Schischka@maf.govt.nz](mailto:Tony.Schischka@maf.govt.nz).



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