

Kiwifruit Variability in Production and Revenue June 2022

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This commentary should be used in conjunction with the dataset formed by Fruition Horticulture to show the cost and profitability of developing land into kiwifruit. It aims to give information on the variation of production, revenue and operating profit throughout the industry. This report assists in applying the dataset information flexibly across a range of sites and regions.

With the aim of the dataset being able to;

- Cover several years of data
- Cover more than one location
- Measure variability in revenue and operating costs.

This report covers some of these important factors that cannot be fully expressed through the data set appended to this report.

Variability in Revenue and Operating Costs

Orchard Gate Return (OGR) is the average amount received by the grower for fruit sales after the deduction of Zespri marketing and post-harvest costs. This is a commonly used indicator of performance and profit within the kiwifruit industry and can be reported either as OGR per tray or OGR per hectare. There is variation seasonally, regionally and site specifically for OGR revenue results due to a number of contributing factors.

There is a large difference in operating costs from orchard to orchard for a wide range of reasons including characteristics of the site such as pests and disease status, access to labour, spending decisions, climatic events and seasonal changes. The variation of these is difficult to gauge with accuracy across the industry, the operating costs within the budget are based on an 'average' Bay of Plenty based orchard.

Below outlines some of the reasons for variability of orchard revenue. These variations need to be considered when applying this dataset to different locations or seasons. Two main factors that influence the OGR are the production rate of the site and the dollars received per tray.

Regional Variation

Regional variation occurs due to variation in climate, soils and seasonal factors. Bay of Plenty is commonly one of the areas that performs at the highest rate of production, due to its climatic suitability of warm weather and adequate rainfall, well suited soils and an established industry infrastructure.

Figure 1 displays average production rates of Green and Gold kiwifruit in different regions relative to the Bay of Plenty (rated as 1), over the past three seasons. The red variety (Red19) is only very new in terms of commercial production and as a result average production is not available. Note, Northland and Gisborne data may be impacted by the large area in young plantings there.

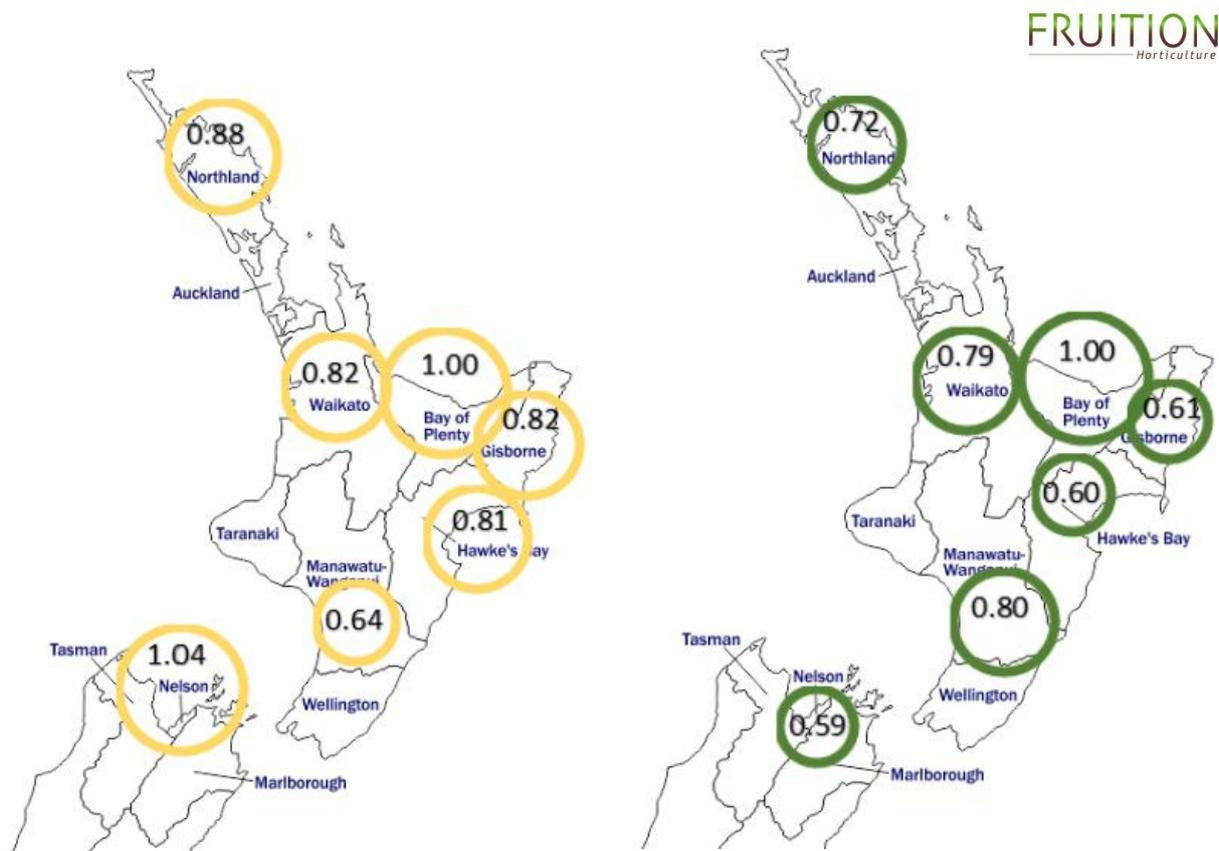


Figure 1: Regional variation in Gold3 and Green production

Figures are displayed in proportion to average Bay of Plenty yields (14,173 trays/ha Gold production and 11,234 trays/ha Green production). Note, yields are reported on the basis of planted area, that is, trays per canopy hectare, not total land area. Canopy area is typically 75 – 90 percent of the total land area depending on the land form and orchard layout. Consideration of these differences in yield needs to be made when applying the dataset to areas outside of the Bay of Plenty region. This is even more significant when considering growing kiwifruit outside of the areas where kiwifruit is currently grown.

It should be noted that Opotiki (0.99), Katikati (0.95) and Auckland (0.92), not on the map, show very similar average yields to that of Tauranga and Te Puke combined for Gold production. Most regions show

Green production significantly lower than that of the combined Tauranga and Te Puke average. Areas not included in the map, but of note, for Green production are also Opotiki (0.98), Katikati (0.80) and Auckland (0.75).

It is also critical to note that despite the relatively high Gold production in the Nelson region this success may not apply to other regions within the South Island. Developments of kiwifruit within the lower areas of the South Island below Nelson are limited. Reliable data on potential of these areas is not available, however due to the cooler temperatures and unfavourable conditions the yields would be expected to be lower than many North Island regions. There will also be impacts on premiums growers received for aspects of fruit quality which will be discussed below. Over time, this may change as climate change increases temperatures and potentially makes these regions more suited to kiwifruit production.

OGR by Variety

Figure 2 shows the difference in yield and OGR between the two main varieties. The graph shows the previous five seasons of national production and indicates the significance of the high return that Gold3 growers are able to gain based on their higher trays/ha and higher value per tray.

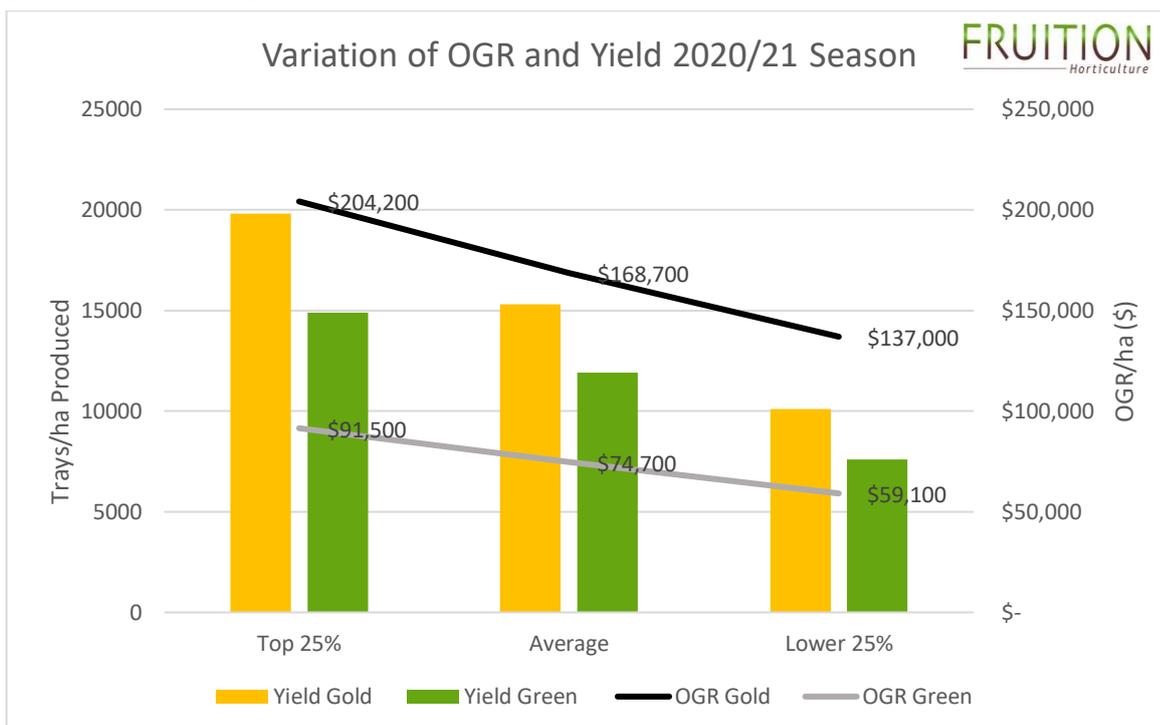


Figure 2: Variation of production between cultivars and growers

Figure 2 also shows the variation between growers within the industry, top quarter Gold3 growers in the 2021/22 season received an extra \$67,000/ha in OGR than those within the lower quarter. Similarly with Green, those growers in the top 25% were able to, on average, receive \$32,000/ha more than those in the lower 25%. This shows the expected variation throughout the industry. Several reasons contribute to this variation including management and site selection.

Yield can be strongly associated with the quality of management in place for the orchard. Decision making on activities such as crop load, pruning and the application of various product can have a large impact on

the final yield and profit. The kiwifruit industry has a high number of competent management companies that manage for owners who are new to the industry or not wanting a hands-on management role. Those sites with experienced management are often those within the top 25% of production. Access to experienced management is not guaranteed in areas where kiwifruit is not normally grown.

Site specific factors such large weather events, exposure to wind, other climate factors and soils all impact on final yield and OGR. The exact impact of these factors cause is difficult to gauge, however, Figure 2 provides some insight into the variation of performance throughout the industry, these differences between growers will be attributed to both factors of management and site-specific characteristics.

Due to Red19 being a relatively new cultivar, there is less information on average yields and variation between seasons and regions. Data from top performing Red19 trialists in 2020 showed that the first 1-3 years after establishment (mostly stump grafted onto mature rootstock) produced very low yields. With majority of these orchards registering no crop for the first 2 seasons.

From the top 50% of production within the Zespri trial figures only one orchard reached 14,000 trays/ha production, this was achieved five years after grafting and from the typically small areas allocated to these trial blocks. From the 20 top performing orchards within the first 5 seasons:

- 7 orchards produced between 8-10,000 trays/ha
- 9 orchards produced between 10-12,000 trays/ha and,
- 4 were able to produce between 12-14,000 trays/ha.

The supplementary information guide recently released by Zespri indicates that from the 2022 harvest 21 growers have averaged 6,674 trays per ha. These vines will be at varying stages of establishment.

A majority of these top performing orchards produced their first crop 2-3 years after grafting and all first crops were under 6,000 trays. These figures were including fruit with defects not suitable for Class 1 export. The expected trays for growers in 2022 is lower than that of the trialists for a number of reasons, one being the new establishment of the Red19 in growing areas with the first commercial licence release in 2021. Table 1 shows the expected level of variation in yield within Red19 growers.

Table 1: Red19 trial production

Class 1 Standard Supply (Size 18-42)	Average Yield (TE per ha)	Average Size
Top 20% of trialists	11,463	36.16
Top 50% of trialists	10,026	36.73
All trialists	7,673	37.62

Blemish was the number one reason for rejecting fruit in the previous season, this is due to the relatively high sensitivity of the fruit skin. Soft fruit have also been a prevalent reject issue during this current season.

Site selection has a large impact on the overall production and quality of Red19 fruit and revenue. Being much more susceptible to wind rub means that site selection needs to be favourable for future wind

events, but also for effective and quick establishment. Canopy establishment is a critical step of Red19 growing with a large number of growers indicating that there is an advantage in not cropping the vines for the first two seasons to primarily concentrate on canopy cover, this is an important consideration when determining initial financials of the cultivar.

Orchard Growing Systems

Organic growing systems for kiwifruit production are a popular option for growers who receive a premium per tray for fruit organically produced, current and forecasted pricing for organic fruit is shown in Table 2 later in the report. Despite this increased price per tray there is a significant challenge for growers to produce per hectare returns similar to that of conventional growers. Organic Gold growers can currently expect approximately \$1.00-\$1.50 premium per tray whereas Green growers receive a premium of around \$3.00 per tray.

Chemicals such as hydrogen cyanamide, which is used for increasing budbreak and hence yield, are not able to be used by organic producers. This results in lower production rates per hectare from organic producers compared to conventional. Many growers are more dependent upon, and susceptible to seasonal variations such as winter chilling without the use of this chemical aid. Top growers are able to overcome this with intensive canopy management.



Figure 3: Benchmark scatter for Green kiwifruit comparing conventional (left) and organic (right) production for the 2021 year

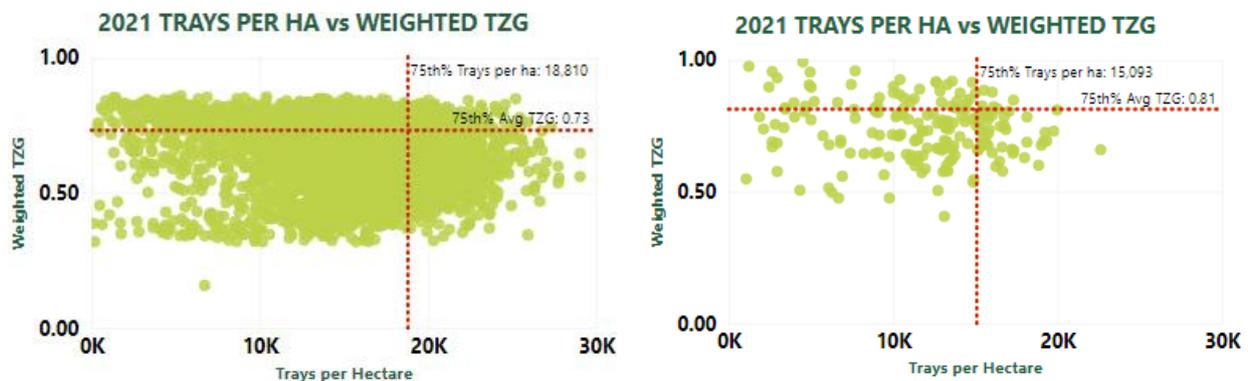


Figure 4: Benchmark scatter for Gold kiwifruit comparing conventional (left) and organic (right) production for the 2021 year

Figure 3 & Figure 4 show the production from each maturity area (the unit by which orchards are subdivided into for harvest) shows the relative performance of conventional and organic Green and Gold growers for the 2021 harvest. It shows that the production is, on average, lower for organic growers but some growers are producing more than the average conventional Green grower (10,214 trays per ha) and at least 25% of organic Gold maturity areas producing more than the average Gold grower with yields in excessive of 15,093 trays per hectare compared to the average Gold growers producing an average of 14,276 trays per hectare in that year.

Due to sufficient production from the current area planted in organic Gold3 Zespri decided to not release any more organic Gold3 licence in 2022 as part of Zespri’s strategy to retain demand ahead of supply in the market. The previous season saw organic Gold3 licence sell at a median of \$305,000/ha compared to the conventional median price of \$550,000/ha that season. The season prior to this licence cost was a median of \$219,565/ha.

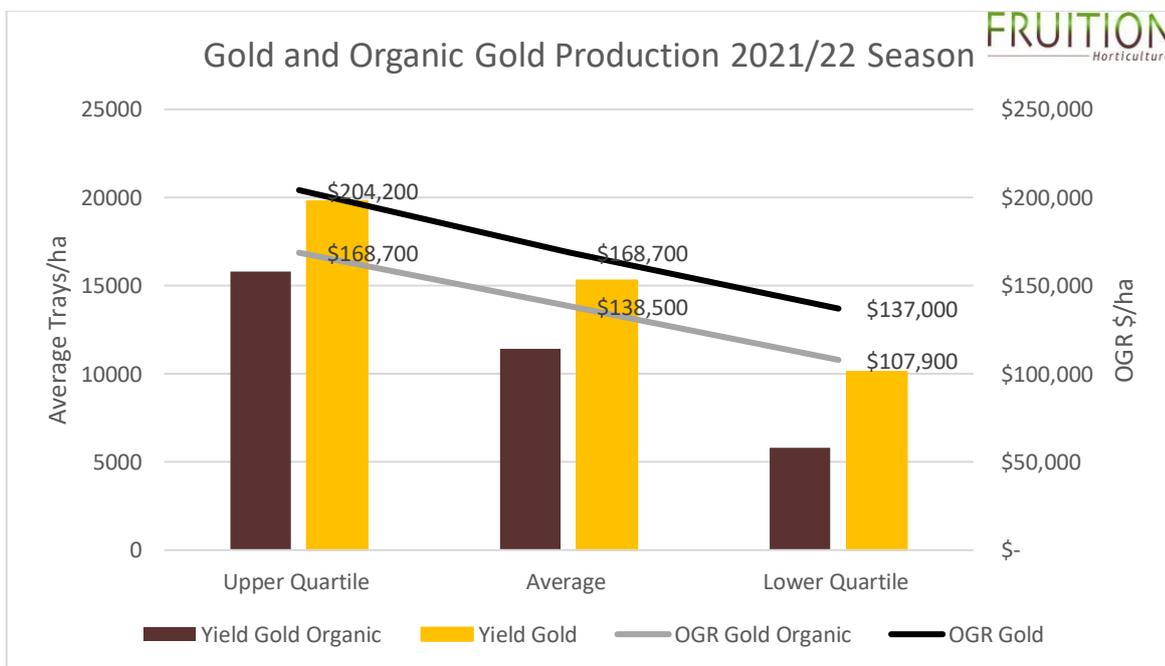


Figure 5 shows the expected average performance of organic Gold growers and the variation between the top quartile and lower quartile growers. It also displays the average yield expected by organic Gold growers compared to conventional Gold growers. This shows a general reduction of approximately 4,000 trays per hectare and a lower OGR of approximately \$30,000/ha. This reduced income is generally due to the lower yield produced on an organic orchard not outweighing the premium paid for organic fruit.

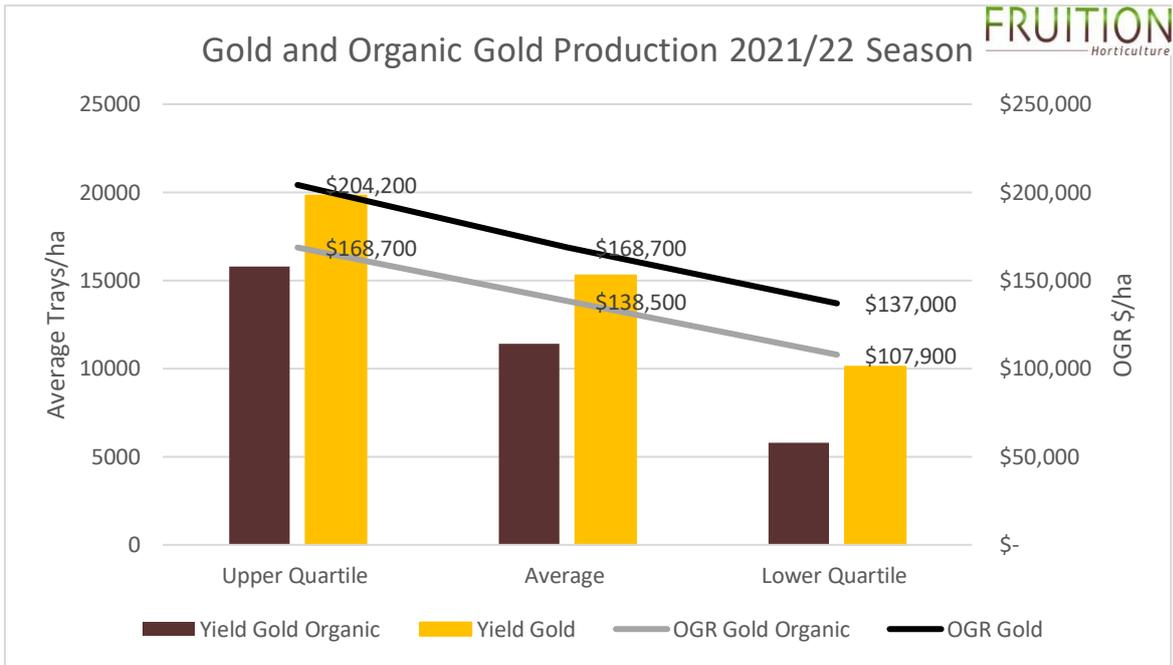


Figure 5: Organic Gold Production and Variation Compared with Conventional Production

Similarly, Figure 6 shows that organic Green growers can expect 5,000 fewer trays than conventional growers and an OGR reduction of approximately \$5,000 - \$8,000/ha. This is a much larger percentage impact on profitability with the already significantly lower returns from Green production per hectare. Organic Green growers can currently expect approximately \$3.00 more per tray than conventional Green growers. Organic Green growers in the lower quartile show an average of \$54,900/ha, this figure is prior to annual on orchard production costs which are continually increasing particularly labour costs.

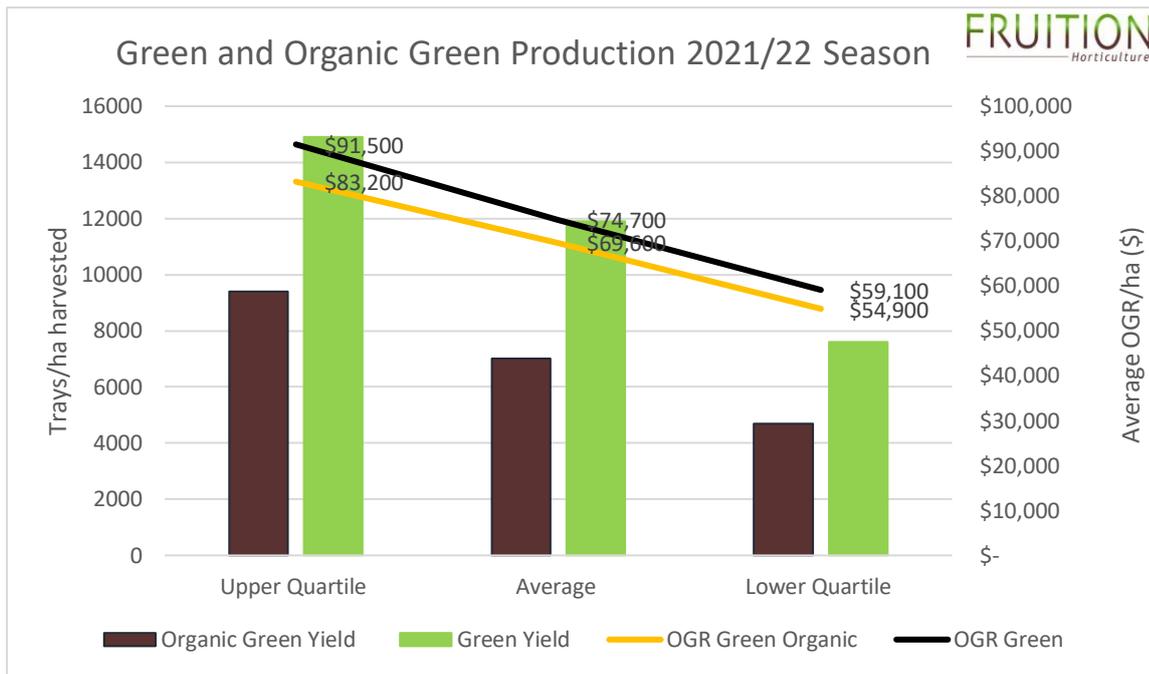


Figure 6: Organic Green Production and Variation Compared to Conventional Production

Payment per Tray

The monetary return per tray varies within maturity areas (MA) on an orchard and between orchards from season to season. This is due to the payment process of Zespri and incentive payments that are made for fruit with desirable harvest timing or fruit quality attributes. Growers are paid under three categories; fruit payments, incentive payments and service payments.

Incentive payments include payments for

- **Taste Payments:** These are paid to incentivize growers to produce fruit of high dry matter, an indicator of future eating quality. Pre-harvest sampling provides an indicator of the dry matter fruit characteristics, reported as Taste Zespri Grade (TZG). Based on this TZG, growers get a higher or lower proportion of the seasons fruit payments.
- **KiwiStart Payment:** This is an incentive to those growers able to harvest early in the season. This ensures consistent supply throughout 12 months of the year in the market. The payment is meant to compensate growers for smaller fruit and lower fruit dry matter due to the earlier harvest but can result in a significant benefit for those growers able to achieve large fruit size and high dry matter fruit early.
- **Storage incentives** are payments made, net of any fruit loss charged to the grower, for fruit that stores for longer than average.

Achieving these incentives is contingent on the correct management decisions being made at the right time and the regional or site-specific characteristics of the orchard. Regions such as Gisborne can typically expect to reach KiwiStart criteria, with warmer temperatures during the growing season but then cool nights bringing on the maturity of fruit. The likelihood of higher payment needs to be considered when budgeting for the likely lower yield of the area.

Future Season Revenue Expectations

The kiwifruit industry has shown trends of high profit growth over previous seasons. Gold3 OGR averages have increased from \$56,445/ha in 2014 to \$177,846/ha in 2020. The lower returns in 2014 were partly impacted by the regrafting of Gold vines from Hort16A to Gold3 because of the vine killing disease known as Psa.

Green OGR guidance from Zespri expects an average OGR between \$54-75,000 per hectare in the 2022 season. Green kiwifruit has continued to remain with an OGR average of between \$60-80,000 for the past five seasons and is likely to continue this trend. With large scale conversions from Green to Gold there has been a significant reduction in the area in production since 2014.

The data below indicates the current pricing range of each kiwifruit variety and the future expectations of pricing and OGR/tray in the next five years. These possible increases and decreases should be considered when looking at the future of investments made today. Zespri regularly updates these forecasts based on their assessment of market demand.

Table 2: Current and forecasted kiwifruit prices

Variety	Current OGR/tray	Expected OGR/ tray – 5 Year Forecast
Zespri SunGold Kiwifruit	\$10.00 - \$12.00	\$8.00 to \$12.00
Organic SunGold Kiwifruit	\$11.00 - \$13.50	\$10.00 to \$14.00
Zespri Green Kiwifruit	\$5.00 - \$7.00	\$6.50 to \$8.50
Zespri Organic Green Kiwifruit	\$8.50 - \$10.50	\$9.00 to \$11.00
RubyRed Kiwifruit	\$15.50 - \$19.00	\$10.50 to \$13.00

Growing Costs

It should be noted that there will be increasing pressure on orchard costs that vary significantly between orchards and are not a part of the OGR figures. Labour, particularly, has seen significant increases in the last few years with pressure from Government for employers to be paying the Living Wage and also increasing attention to detail to achieve quality outputs increasing the average cost of on-orchard activities.

Appendix One – Gold Orchard Development Assumptions and Budget

Key Assumptions	FRUITION Horticulture		Date: Jun-22							
	Gold (G3)		Production Assumptions							
Income			Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Canopy Hectares Developed	1.00	ha								
Total Export Trays	14,000	per ha		0%	0%	20%	50%	80%	100%	100%
\$ per Tray	11.00	per tray								
Salvage Value excluding land for NPV & IRR	-	per ha								
Development Costs										
Establishment										
Land Purchase	-	per ha	100%							
Licence	800,000	per ha		100%						
Land Preparation (Drainage and Earthworks)	16,000			100%						
Natural Shelter	1,000	per ha		100%						
Water supply & Irrigation headworks	40,000	per ha		100%						
Artificial Shelter	56,000	per ha		100%						
Vine support structures	60,000	per ha		75%	25%					
Irrigation & Frost protection reticulation	25,000	per ha		100%						
Plants & Planting	35,000	per ha		95%	5%					
Annual Production Costs										
Labour Expenses										
Harvest wages	0.70	per tray		100%	100%	100%	100%	100%	100%	100%
Winter Pruning	9,000	per ha		0.00%	0.00%	35.29%	80.39%	100.00%	100.00%	100.00%
Male Pruning	2,400	per ha		27.78%	27.78%	83.33%	83.33%	100.00%	100.00%	100.00%
Summer Pruning	6,500	per ha		44.44%	44.44%	66.67%	88.89%	100.00%	100.00%	100.00%
Thinning (Flower)	4,000	per ha		0.00%	0.00%	44.00%	100.00%	100.00%	100.00%	100.00%
Girdling	2,000	per ha		0.00%	50.00%	50.00%	50.00%	100.00%	100.00%	100.00%
Management	2,500	per ha		100%	100%	100%	100%	100%	100%	100%
Other Direct Expenses										
Weed, Pest, Other agrichemical	5,000	per ha		40%	60%	100%	100%	100%	100%	100%
Fertiliser & Lime	4,000	per ha		100%	100%	100%	100%	100%	100%	100%
Pollination	3,000	per ha		0%	15%	60%	100%	100%	100%	100%
General Maintenance	5,000	per ha		50%	80%	100%	100%	100%	100%	100%

Gold Orchard Development - 15 year investment
 Indicative Figures - Part 1 (Revenue and Development)
 June 2022
 Prepared by Fruition Horticulture (BOP)

	Years Ending in June, forecast for 15 years						Full Production	
	Total	0	1	2	3	4	5	6 - 15
Revenue								
Canopy Hectares Developed			1.00					
% of full production			0%	0%	20%	50%	80%	100%
Trays per ha			-	-	2,800	7,000	11,200	14,000
Total Export Trays			-	-	2,800	7,000	11,200	14,000
\$ per Tray			11.00	11.00	11.00	11.00	11.00	11.00
Total OGR \$			-	-	30,800	77,000	123,200	154,000
Salvage Value excluding land for NPV & IRR								-
Total Revenue	1,771,000	-	-	-	30,800	77,000	123,200	154,000
Development Costs								
Establishment								
Land Purchase	-	-	-	-	-	-	-	-
Licence	800,000	-	800,000	-	-	-	-	-
Natural Shelter	1,000	-	1,000	-	-	-	-	-
Water supply & Irrigation headworks	40,000	-	40,000	-	-	-	-	-
Artificial Shelter	56,000	-	56,000	0	-	-	-	-
Vine support structures	60,000	-	45,000	15,000	-	-	-	-
Irrigation & Frost protection reticulation	25,000	-	25,000	-	-	-	-	-
Plants & Planting	35,000	-	33,250	1,750	-	-	-	-
Total Development Costs	1,017,000	-	1,000,250	16,750	-	-	-	-

Gold Orchard Development - 15 year investment Indicative Figures - Part 2 (Production Costs & Annual Surplus) June 2022 Prepared by Fruition Horticulture (BOP)		FRUITION Horticulture							
		Years Ending in June, forecast for 15 years							Full Production
		Total	0	1	2	3	4	5	6 - 15
Annual Production Costs									
Labour Expenses									
Harvest wages	112,700	-	-	-	1,960	4,900	7,840	9,800	
Winter Pruning	109,412	-	-	-	3,176	7,235	9,000	9,000	
Male Pruning	31,733	-	667	667	2,000	2,000	2,400	2,400	
Summer Pruning	87,389	-	2,889	2,889	4,333	5,778	6,500	6,500	
Thinning (Flower)	49,760	-	-	-	1,760	4,000	4,000	4,000	
Girdling	25,000	-	-	1,000	1,000	1,000	2,000	2,000	
Management	37,500	-	2,500	2,500	2,500	2,500	2,500	2,500	
Other Direct Expenses									
Weed, Pest, Other agrichemical	70,000	-	2,000	3,000	5,000	5,000	5,000	5,000	
Fertiliser & Lime	60,000	-	4,000	4,000	4,000	4,000	4,000	4,000	
Pollination	38,250	-	-	450	1,800	3,000	3,000	3,000	
General Maintenance	71,500	-	2,500	4,000	5,000	5,000	5,000	5,000	
Total Annual Production Costs	693,244	-	14,556	18,506	32,530	44,413	51,240	53,200	
Total Expenditure		-	1,014,806	35,256	32,530	44,413	51,240	53,200	
Annual Surplus (Deficit)		-	-1,014,806	-35,256	-1,730	32,587	71,960	100,800	
Accumulated Cashflow 15 years	60,756	-	-1,014,806	-1,050,061	-1,051,791	-1,019,204	-947,244	60,756	
Internal Rate of Return (IRR)*	0.63%								

Appendix Two – Green Orchard Development Assumptions and Budget

		FRUITION <i>Horticulture</i>									Date:	Jun-22	
Key Assumptions													
		Green (Hayward)		Production Assumptions									
Income				Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7		
Canopy Hectares Developed	1.00	ha											
Total Export Trays	11,000	per ha			0%	0%	15%	40%	75%	90%	100%		
\$ per Tray	7.00	per tray											
Salvage Value excluding land for NPV & IRR	-	per ha											
Development Costs													
Establishment													
Land Purchase	-	per ha		100%									
Licence	-	per ha			100%								
Land Preparation (Drainage and Earthworks)	16,000												
Natural Shelter	1,000	per ha			100%								
Water supply & Irrigation headworks	40,000	per ha			100%								
Artificial Shelter	56,000	per ha			100%								
Vine support structures	60,000	per ha			75%	25%							
Irrigation & Frost protection reticulation	25,000	per ha			100%								
Plants & Planting	35,000	per ha			95%	5%							
Annual Production Costs													
Labour Expenses													
Harvest wages	0.55	per tray		100%	100%	100%	100%	100%	100%	100%	100%		
Winter Pruning	9,000	per ha		0.00%	0.00%	35.29%	80.39%	100.00%	100.00%	100.00%	100.00%		
Male Pruning	2,400	per ha		27.78%	27.78%	83.33%	83.33%	100.00%	100.00%	100.00%	100.00%		
Summer Pruning	6,000	per ha		44.44%	44.44%	66.67%	88.89%	100.00%	100.00%	100.00%	100.00%		
Thinning (Flower)	4,000	per ha		0.00%	0.00%	44.00%	100.00%	100.00%	100.00%	100.00%	100.00%		
Girdling	2,000	per ha		0.00%	0.00%	50.00%	50.00%	100.00%	100.00%	100.00%	100.00%		
Management	2,500	per ha		100%	100%	100%	100%	100%	100%	100%	100%		
Other Direct Expenses													
Weed, Pest, Other agrichemical	5,000	per ha		40%	60%	100%	100%	100%	100%	100%	100%		
Fertiliser & Lime	2,500	per ha		100%	100%	100%	100%	100%	100%	100%	100%		
Pollination	4,000	per ha		0%	15%	60%	100%	100%	100%	100%	100%		
General Maintenance	5,000	per ha		50%	80%	100%	100%	100%	100%	100%	100%		

Green Orchard Development - 15 year investment
Indicative Figures - Part 1 (Revenue & Development Costs)

Prepared by Fruition Horticulture (BOP)

Years Ending in June, forecast for 15 years

Full Production

	Total	1	2	3	4	5	6	7 - 15
Revenue								
Canopy Hectares Developed		1.00						
% of full production		-	-	15%	40%	75%	90%	100%
Trays per ha		-	-	1,650	4,400	8,250	9,900	11,000
Total Export Trays		-	-	1,650	4,400	8,250	9,900	11,000
\$ per Tray		7.00	7.00	7.00	7.00	7.00	7.00	7.00
Total OGR \$		-	-	11,550	30,800	57,750	69,300	77,000
Salvage Value excluding land for NPV & IRR								-
Total Revenue	862,400	-	-	11,550	30,800	57,750	69,300	77,000
Development Costs								
Establishment								
Land Purchase	-	-	-	-	-	-	-	-
Licence	-	-	-	-	-	-	-	-
Natural Shelter	1,000	1,000	-	-	-	-	-	-
Water supply & Irrigation headworks	40,000	40,000	-	-	-	-	-	-
Artificial Shelter	56,000	56,000	-	-	-	-	-	-
Vine support structures	60,000	45,000	15,000	-	-	-	-	-
Irrigation & Frost protection reticulation	25,000	25,000	-	-	-	-	-	-
Plants & Planting	35,000	33,250	1,750	-	-	-	-	-
Total Development Costs	217,000	200,250	16,750	-	-	-	-	-

Green Orchard Development - 15 year investment Indicative Figures - Part 2 (Production Costs & Surplus)		Years Ending in June, forecast for 15 years							Full Production
		Total	1	2	3	4	5	6	7 - 15
Annual Production Costs									
Labour Expenses									
Harvest wages	67,760	-	-	908	2,420	4,538	5,445	6,050	
Winter Pruning	109,412	-	-	3,176	7,235	9,000	9,000	9,000	
Male Pruning	31,733	667	667	2,000	2,000	2,400	2,400	2,400	
Summer Pruning	80,667	2,667	2,667	4,000	5,333	6,000	6,000	6,000	
Thinning (Flower)	49,760	-	-	1,760	4,000	4,000	4,000	4,000	
Girdling	24,000	-	-	1,000	1,000	2,000	2,000	2,000	
Management	37,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	
Other Direct Expenses									
Weed, Pest, Other agrichemical	70,000	2,000	3,000	5,000	5,000	5,000	5,000	5,000	
Fertiliser & Lime	37,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	
Pollination	51,000	-	600	2,400	4,000	4,000	4,000	4,000	
General Maintenance	71,500	2,500	4,000	5,000	5,000	5,000	5,000	5,000	
Total Annual Production Costs	630,832	12,833	15,933	30,244	40,989	46,938	47,845	48,450	
Total Expenditure	847,832	213,083	32,683	30,244	40,989	46,938	47,845	48,450	
Annual Surplus (Deficit)		-213,083	-32,683	-18,694	-10,189	10,813	21,455	28,550	
Accumulated Cashflow 15 years	14,568	-213,083	-245,767	-264,461	-274,649	-263,837	-242,382	14,568	
Internal Rate of Return (IRR)	0.57%								

Appendix Three – Red Orchard Development Assumptions and Budget

Key Assumptions				Date: Jun-22						
		Red	Production Assumptions							
			Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Income										
Canopy Hectares Developed	1.00 ha									
Total Export Trays	10,000 per ha			0%	0%	0%	20%	40%	70%	90%
\$ per Tray	11.50 per tray									
Salvage Value excluding land for NPV & IRR	- per ha									
Development Costs										
Establishment										
Land Purchase	- per ha		100%							
Licence	147,000 per ha			100%						
Land Preparation (Drainage and Earthworks)	16,000									
Natural Shelter	1,000 per ha			100%						
Water supply & Irrigation headworks	40,000 per ha			100%						
Artificial Shelter	60,000 per ha			100%						
Vine support structures	60,000 per ha			75%	25%					
Irrigation & Frost protection reticulation	25,000 per ha			100%						
Plants & Planting	35,000 per ha			95%	5%					
Annual Production Costs										
Labour Expenses										
Harvest wages	0.70 per tray			100%	100%	100%	100%	100%	100%	100%
Winter Pruning	9,000 per ha			0.00%	0.00%	0.00%	40.00%	80.00%	100.00%	100.00%
Male Pruning	2,400 per ha			0.00%	10.00%	20.00%	83.33%	100.00%	100.00%	100.00%
Summer Pruning	6,500 per ha			20.00%	44.44%	66.67%	88.89%	100.00%	100.00%	100.00%
Thinning (Flower)	5,000 per ha			0.00%	0.00%	0.00%	100.00%	100.00%	100.00%	100.00%
Girdling	2,000 per ha			0.00%	0.00%	0.00%	50.00%	100.00%	100.00%	100.00%
Management	2,500 per ha			100%	100%	100%	100%	100%	100%	100%
Other Direct Expenses										
Weed, Pest, Other agrichemical	4,000 per ha			40%	60%	100%	100%	100%	100%	100%
Fertiliser & Lime	4,000 per ha			100%	100%	100%	100%	100%	100%	100%
Pollination	3,500 per ha			0%	15%	60%	100%	100%	100%	100%
General Maintenance	5,000 per ha			50%	80%	100%	100%	100%	100%	100%

Red Orchard Development - 15 year investment
 Indicative Figures - Part 1 (Revenue & Development Costs)
 June 2022
 Prepared by Fruition Horticulture (BOP)

Years Ending in June, forecast for 15 years

Full Production

	Total	1	2	3	4	5	6	7	8-15
Revenue									
Canopy Hectares Developed		1.00							
% of full production		0%	0%	0%	20%	40%	70%	90%	100%
Trays per ha		-	-	-	2,000	4,000	7,000	9,000	10,000
Total Export Trays		-	-	-	2,000	4,000	7,000	9,000	10,000
\$ per Tray		11.50	11.50	11.50	11.50	11.50	11.50	11.50	11.50
Total OGR \$		-	-	-	23,000	46,000	80,500	103,500	115,000
Salvage Value excluding land for NPV & IRR									-
Total Revenue	1,173,000	-	-	-	23,000	46,000	80,500	103,500	115,000
Development Costs									
Establishment									
Land Purchase	-	-	-	-	-	-	-	-	-
Licence	147,000	147,000	-	-	-	-	-	-	-
Natural Shelter	1,000	1,000	-	-	-	-	-	-	-
Water supply & Irrigation headworks	40,000	40,000	-	-	-	-	-	-	-
Artificial Shelter	60,000	60,000	-	-	-	-	-	-	-
Vine support structures	60,000	45,000	15,000	-	-	-	-	-	-
Irrigation & Frost protection reticulation	25,000	25,000	-	-	-	-	-	-	-
Plants & Planting	35,000	33,250	1,750	-	-	-	-	-	-
Total Development Costs	368,000	351,250	16,750	-	-	-	-	-	-

Red Orchard Development - 15 year investment
 Indicative Figures - Part 2 (Production Costs & Surplus)
 June 2022
 Prepared by Fruition Horticulture (BOP)

	Years Ending in June, forecast for 15 years								Full Production
	Total	1	2	3	4	5	6	7	8 -15
Annual Production Costs									
Labour Expenses									
Harvest wages	71,400	-	-	-	1,400	2,800	4,900	6,300	7,000
Winter Pruning	109,412	-	-	3,176	7,235	9,000	9,000	9,000	9,000
Male Pruning	31,733	667	667	2,000	2,000	2,400	2,400	2,400	2,400
Summer Pruning	87,389	2,889	2,889	4,333	5,778	6,500	6,500	6,500	6,500
Thinning (Flower)	49,760	-	-	1,760	4,000	4,000	4,000	4,000	4,000
Girdling	25,000	-	1,000	1,000	1,000	2,000	2,000	2,000	2,000
Management	37,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Other Direct Expenses									
Weed, Pest, Other agrichemical	56,000	1,600	2,400	4,000	4,000	4,000	4,000	4,000	4,000
Fertiliser & Lime	60,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Pollination	44,625	-	525	2,100	3,500	3,500	3,500	3,500	3,500
General Maintenance	71,500	2,500	4,000	5,000	5,000	5,000	5,000	5,000	5,000
Total Annual Production Costs	644,319	14,156	17,981	29,870	40,413	45,700	47,800	49,200	49,900
	-								
Total Expenditure	1,012,319	365,406	34,731	29,870	40,413	45,700	47,800	49,200	49,900
	-								
Annual Surplus (Deficit)	160,681	-365,406	-34,731	-29,870	-17,413	300	32,700	54,300	65,100
Accumulated Cashflow 15 years	160,681	-365,406	-400,136	-430,006	-447,419	-447,119	-414,419	-360,119	160,681
Internal Rate of Return (IRR)*	3.33%								