

USDA Foreign Agricultural Service

GAIN Report

Global Agricultural Information Network

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New Zealand Kiwifruit - A Sector Report

Report Categories:

Kiwifruit

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Report Highlights:

Production and Exports are expected to decline for the second year in a row to a forecast 338,400 MT, and 319,000 MT respectively in CY 2013. This is the result of a virulent form of bacterial canker disease Pseudomonas Syringae Actinidiae “PSA(v)”, which has now infected vines in about 62% of the total number of kiwifruit orchards in New Zealand. Kiwifruit still remain in demand by world markets and Zespri has managed to increase the prices it received in 2012.

Executive Summary

The damage and losses caused by the bacterial canker disease PSA(v), first diagnosed in November 2010, have largely been responsible for the ensuing accumulated 20% reduction in kiwifruit production now forecast at 338,400 MT for the 2013 Calendar Year. With domestic consumption relatively stable export tonnages have undergone a similar slide. It is forecast that, from a peak of 400,817 MT in 2011, in 2013 exports will drop to 319,000 MT.

The virulent isolate (v) of the bacterial canker disease *Pseudomonas Syringae Actinidiae* (Psa), commonly referred to as Psa(v) has now spread to 2,047 orchards, approximately 62% of the total number of kiwifruit orchards. About 97% of the orchards in the main kiwifruit growing district Te Puke, where over 30% of the nation's orchards are situated, now have some degree of infection. PSA(v) was first identified in Te Puke. Some vines are lucky enough to escape with just the primary symptom, leaf spotting and wilting, but if the infection progresses to the secondary phase it will result in vine die-back or the death of the plant. The bacterium has never been identified on the fruit, and there are no known impacts on animal or human health. There have been no phyto-sanitary measures taken by any major destination market for New Zealand Kiwifruit.

The variety known as "Gold", or specifically cultivar "Hort16a", is very much more susceptible to PSA(v) than the originally commercialized cultivar "Hayward", better known as "Green". This is of particular concern to growers and the industry at large because the profitability of the sector over the last decade has been largely the result of the unparalleled success of Gold Kiwifruit exports, especially to the Japanese market. In Te Puke, formerly the centre for Hort16a growing, the cultivar has been decimated to the point of almost complete collapse. Plant breeding for high levels of resistance or tolerance is seen as the main long term pathway to be able to contend with the disease. In 2012 when a new Gold cultivar "G3", which is only moderately less susceptible than Hort16a, was offered for grafting over or replanting former Hort16a blocks growers rushed to convert 2,130 hectares (approx 16% of total kiwifruit area and over 80% of Gold plantings).

As mentioned, the Japanese market is very important and in 2012 it has remained the number one destination by value taking 16% of the volume but accounting for 30% of the total export receipts. This feat is achieved because the Japanese pay the highest prices for both Green and Gold varieties and a greater proportion of the fruit shipped to Japan is Gold fruit compared with the rest of the world. Around the world Gold fruit sold at a 70% premium to Green fruit. In Japan the premium is 40%, which illustrates the high price for Green fruit achieved by the very careful control of logistics, volume, and marketing by Zespri. Zespri is a grower owned company which markets nearly all of the fruit to all destinations except Australia under the single point of entry exporting legislation.

Production, Supply, & Distribution

New Zealand Kiwifruit (HA, MT)	2011		2012		2013	
	Market Year Begin: Jan 2011		Market Year Begin: Jan 2012		Market Year Begin: Jan 2013	
	New Post	% Change from last yr	New Post	% Change from last yr	New Post	% Change from last yr
Total Area Planted	13,800	1.5%	13,800	0.0%	13,000	-5.8%
Area Harvested	13,050	2.4%	13,000	-0.4%	11,750	-9.6%
Total Production	420,231	8.8%	376,400	-10.4%	338,400	-10.1%
Imports	586	-23.2%	600	2.4%	600	0.0%
Total Supply	420,817	8.7%	377,000	-10.4%	339,000	-10.1%
Exports	400,817	9.2%	357,000	-10.9%	319,000	-10.6%
Domestic Consumption	20,000	0.0%	20,000	0.0%	20,000	0.0%
Total Distribution	420,817	8.7%	377,000	-10.4%	339,000	-10.1%
TS=TD	0		0		0	
Production Yield T/ha	32.2	6.3%	29.0	-10.1%	28.8	-0.5%

Production & Exports

2013 (Marketing Year is the Calendar Year)

It is likely production will fall to within a range between 312,000 MT and 366,000 MT. At the lower end of the range there would be virtually no Gold variety production from the Te Puke district of either Hort16a or the new cultivar G3, and Green production would be set back as well. This is likely the worst case scenario for the damage being caused by the bacterial canker disease PSA(v). At the upper end of the expected production range Gold volume loss begins to be stemmed, helped by the introduction of G3, while Green production all but recovers from the PSA(v) setbacks. For the PSD table Post is forecasting 338,000 MT, the midpoint in the expected production range. This would still entail a 10% reduction from the 2012 number. Over two years there will have been an accumulated 20% reduction in production which is primarily the effect of PSA(v).

On the export front it is forecast that total shipments will reach 319,000 MT which is the midpoint of an expected range going from a low at 291,000 MT up to a high of 346,000 MT.

2012

[New Zealand] Kiwifruit production in 2012 is estimated at 376,000 MT, 34,000 MT higher than Post originally forecast 12 months ago. Even so, 2012's crop was 10% less than the bumper crop in 2011. The reduction in production was brought about by:

- The Bacterial Canker disease PSA(v) which has ravaged Bay of Plenty orchards. While the disease has devastated mainly the Gold variety Hort16a, many growers were able to nurse one last, smaller crop of Gold fruit from the vines in 2012.
- After the very big yields in 2011 it wasn't expected that the growing conditions or the vines physiological condition would support equivalent yields in 2012, and this proved to be the case on orchards which weren't affected by PSA (v).

In turn the 2012 production is likely to give rise to an export volume of 357,000MT which will be 11% behind 2011. Despite PSA(v) spreading through most of the orchards in the main Kiwifruit growing district Te Puke, the volume of Gold exported in the first 10 months of the current year was still 11% above the 2010 level for the same period. However when compared to the same period in 2011 the volume of Gold shipped in 2012 is 17% behind.

Year To Date: January - October; Value in US Dollars; Quantity in metric tons; Av Price is USD/MT									
Partner Country	2010			2011			2012		
	USD	Quantity	Av Price	USD	Quantity	Av Price	USD	Quantity	Av Price
Japan	211,617,950	61,195	3,458	230,969,426	61,653	3,746	244,345,539	58,302	4,191
EU Dest. Unknown	155,643,771	110,185	1,413	186,181,965	115,939	1,606	155,686,801	104,851	1,485
China	47,839,018	23,276	2,055	66,533,826	27,683	2,403	90,299,559	32,515	2,777
Taiwan	43,167,783	19,903	2,169	53,198,487	22,296	2,386	73,420,935	27,434	2,676
Spain	62,361,274	47,530	1,312	67,229,959	44,262	1,519	55,222,740	39,125	1,411
Korea South	45,888,868	22,737	2,018	62,090,232	25,743	2,412	50,826,099	20,274	2,507
Australia	21,702,927	13,493	1,608	32,998,445	15,337	2,152	31,896,102	14,325	2,227
Hong Kong	14,521,707	6,568	2,211	20,560,179	8,041	2,557	22,233,629	7,219	3,080
Italy	22,459,055	16,912	1,328	25,981,441	17,015	1,527	21,296,402	15,489	1,375
United States	19,520,861	17,985	1,085	21,316,961	20,549	1,037	18,969,022	11,624	1,632
Malaysia	6,511,339	3,251	2,003	8,568,097	4,045	2,118	10,168,168	4,441	2,290
Indonesia	3,230,598	1,508	2,142	5,868,996	2,474	2,372	6,361,763	2,566	2,479
Singapore	4,568,383	2,211	2,066	5,392,675	2,460	2,192	5,705,210	2,244	2,542
Canada	2,640,972	2,852	926	1,514,865	1,409	1,075	2,988,006	1,964	1,521
Thailand	1,722,647	980	1,758	2,343,295	1,330	1,762	2,785,535	1,387	2,008
Rest of World	16,250,199	11,390	1,427	22,986,160	15,589	1,475	20,208,731	12,658	1,597
Total for World	679,647,352	361,978	1,878	813,735,007	385,818	2,109	812,414,244	356,419	2,279

Source: Global Trade Atlas

Japan remains the number one destination by value, taking 16% of the volume but accounting for 30% of the total export receipts in the YTD 2012. There are two dynamics at work here:

- The Japanese market pays the highest prices for both Green and Gold varieties, and ;
- Japan receives a greater share of Gold fruit at 42% of shipments (YTD 2012) versus 24% of the total volume of Kiwifruit exported worldwide (YTD 2012).

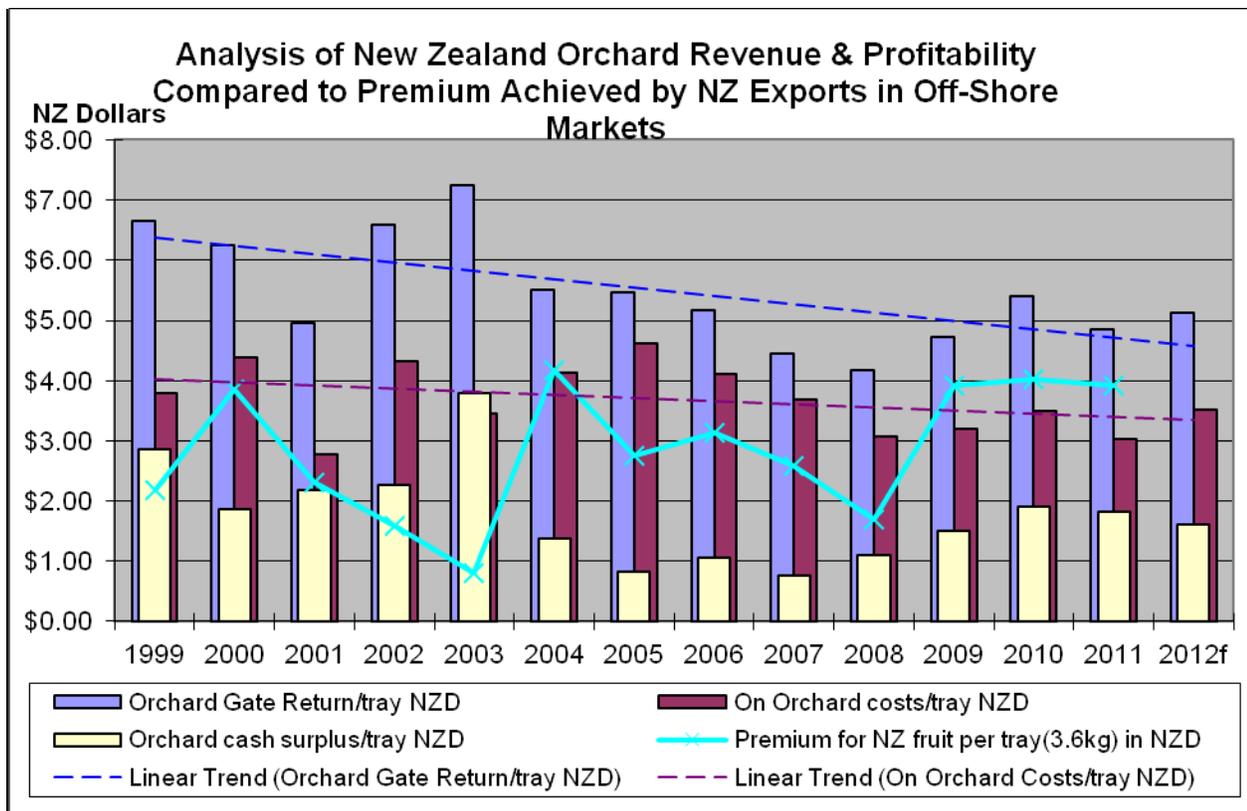
The success of the Kiwifruit sector is in no small measure dependant on how well the Japanese market has been developed and managed by Zespri the company which handles marketing and logistics for nearly all Kiwifruit exports apart from those to Australia.

Of note is the year-on-year increase in shipments to China of both Gold and Green fruit at above world average prices.

New Zealand Kiwifruit Export Statistics by Variety												
Year To Date: January - October												
Description	2010				2011				2012			
	US D (m)	% share value	Qty (MT)	% share Qty	US D (m)	% share value	Qty (MT)	% share Qty	US D (m)	% share value	Qty (MT)	% share Qty
Total for all Kiwi Fruit, Fresh	679.6		361,978		813.7		385,818		812.4		356,419	
Green Kiwifruit, Fresh	450.0	66.2%	284,322	78.5%	487.1	59.9%	283,267	73.4%	486.5	59.9%	271,212	76.1%
Gold Kiwifruit, Fresh	225.9	33.2%	75,308	20.8%	322.4	39.6%	100,571	26.1%	321.3	39.5%	83,835	23.5%
Kiwifruit, Other Than Gold Or Green	3.8	0.6%	2,348	0.6%	4.2	0.5%	1,981	0.5%	4.7	0.6%	1,371	0.4%

Source: Global Trade Atlas

Grower & Sector Profitability

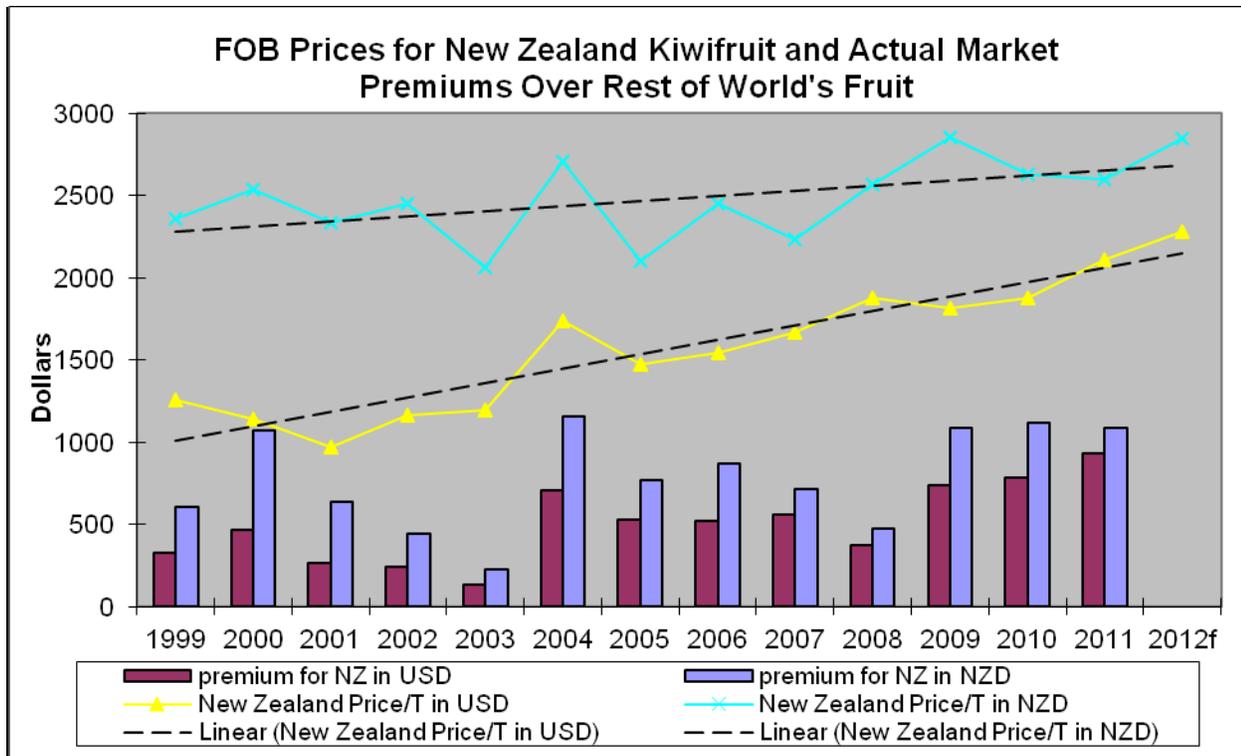


Even if yields of G3 Gold can compensate to a large degree the loss of the Hort16a Gold cultivar, grower and post-harvest operator profitability over the next 3 years is going to be negatively impacted. The combination of production losses due to PSA(v), and the delay while new cultivars come into production, will reduce revenue and increase on-orchard costs. The Ministry for Primary Industry has estimated that losses attributable to PSA(v) will cost the sector NZ \$350-\$410 million between 2012 and 2015.

While a proportion of growers have lost all or part of their 2012 harvest to PSA(v) generally the growers maintained their profitability at similar levels to 2011. Profitability of the sector as a whole, however, has been terribly dependant on the very high profits generated from Gold production. Ministry for Primary Industry monitoring work over the last 5 years puts yields of Gold Kiwifruit at 10,000 to 12,000 trays per hectare (1 Tray = 3.6kg) which is 20-30% higher than Green K-F yields. In addition grower revenue per tray for Gold fruit is 60-75% higher than that for Green fruit which results in revenue per hectare for Gold being NZ\$60,000 to 92,000, compared to Green at NZ\$31,000 to 35,000. On-orchard costs for both varieties are similar, at around NZ\$29,000 per hectare.

If Gold production is reduced significantly on a more permanent basis this will mean a lasting drop in sector revenue and more importantly a profitability reduction.

Understandably, growers for the last 18 months have been very cautious as they never know when or if their orchards are going to be infected with PSA(v). In addition growers who decide to change to a new cultivar need to be able to finance the approximately NZ\$60,000 per hectare cost to graft over/re-plant a new cultivar. There is also the risk that the new varieties on offer at the moment may ultimately still succumb to PSA(v).



Source: Global Trade Atlas

Psa(v) Update and Outlook

The virulent isolate (v) of the bacterial canker disease *Pseudomonas Syringae Actinidiae* (Psa), commonly referred to as Psa(v) was first formally identified in New Zealand in November 2010. There are several lines of thought as to how it arrived in New Zealand but nothing has been confirmed. In Italy, Psa(v) (known as "Batterosi") has decimated the Gold orchards, especially since late last decade, and spread to French Kiwifruit orchards in 2010. It can be transferred via Kiwifruit vegetative material, and it is spread by aerosol on the wind and rain. It is also believed to be spread by footwear, vehicles and orchard tools.

There is some thought it may be able to survive for a short period on non-host vegetation. It was first thought the bacteria was not viably transferred on/in pollen but may survive on traces of vegetation ground up when pollen is collected and processed to be used for non-bee mechanical pollination. In the past, pollen has been transferred both between growing regions and countries. However MPI has now confirmed that PSA(v) has been discovered on pollen from inside closed flowers

In an orchard it can exist as:

- an epiphyte, living on plant surfaces without causing high levels of infection; (primary infection); and/or
- as an endophyte, living within the vine, having entered through natural plant openings(including weakened vine epidermis caused by wind rub) or manmade wounds—resulting in severe infection; (secondary infection)

Growth of the bacteria outside/inside the vines can result in leaf spotting, cane/leader dieback and, often with secondary infection cases, vine death accompanied by the production of exudates. The fruit is not known to carry the bacterium, nor are there any known impacts on animal or human health. There is no current cure for the secondary infection phase of the disease.

Primary infection by PSA(v) showing the wilted and spotted leaves



Kiwifruit vine showing the distinctive red ooze symptomatic of secondary PSA(v) infection of the plants vascular system.

By December the 19th 2012 PSA(v) had spread to 2047 orchards, approximately 62% of the total number of orchards in New Zealand. Infected orchards encompass 9,563 ha, which is about 69% of the total Kiwifruit area. Note that while an orchard may have infected vines depending on management, orchard location and prevailing micro climates, the actual proportion of vines in any particular orchard which are actually infected varies widely -- from only a few percent to virtually every vine. There are 17 Kiwifruit growing districts categorized by Kiwifruit Vine Health. Te Puke, the leading district with approximately 33% of the total number of orchards, had approximately 97% of all its orchards with some degree of infection by mid-December 2012. PSA(v) was first identified in Te Puke.

First responses and the ongoing orchard management in the face of PSA(v) infection have been targeted to: increase protectant spraying (using Copper, antibiotics, biological controls, & elicitors); adopt a high standard of orchard hygiene (disinfecting worker clothing, boots and orchard machinery, applying protectants to pruning cuts); monitor orchards intensively; and remove infected vegetation or complete plants.

Research into the disease continues and in the long term it is still reasoned that plant breeding for varieties with high PSA tolerance is the best pathway forward to contend with the disease. To date the major long term response has been to remove Hort16a vines and graft over/replant with a new cultivar in the hope the new cultivars on offer will have greater tolerance to the disease. By August 2012, 2,130 hectares of new varieties, mostly the new Gold "G3" cultivar, were grafted onto rootstock plants of the former Hort16a Gold vines. Grafting onto existing mature rootstock should mean full production will be reached in 3 years. If a new rootstock needs to be planted it would take 5-7 years to reach full production.

However changing to G3 is not a sure thing; there is still a risk of PSA(v) infection. G3 is less susceptible to the disease than Hort16a but there are several reports now of G3 failing and being struck down with PSA(v). However, many existing Gold growers, who have enjoyed orchard profitability at the rate of NZ\$30,000 to \$60,000 per hectare and can expect the same profits in the future if they can achieve normal yields, have decided even though the costs and risks are significant a swift change to G3 is the best course of action.

Many other ideas to overcome the disease continue to be explored. Two that have received grower and media attention have been:

- Erection of tunnel house film canopies over the kiwifruit blocks which would stop rainfall directly onto the plants and reduce wind run is being trialed after reports kiwifruit growing in tunnel houses didn't get PSA. This is an expensive option at NZ\$100,000-120,000 per hectare to establish, but if successful many Gold growers would be likely to adopt the technique.
- A nutrient/fertilizer system reportedly trialed successfully in Italy has been brought to NZ.

For more information on PSA(v) go to: <http://www.kvh.org.nz/>

Trade Policy

Turners & Growers (T&G)

Post has reported in previous GAIN reports on attempts by listed fruit processing; trading; and distribution company Turners & Growers to overturn the regulations controlling the export of Kiwifruit. T&G has now been taken over by a German company Bay Wa who are a major fruit distributor in the EU. With the change in philosophy and management at T&G it has dropped all legal claims and other action against Zespri and has commenced working with Zespri to collaboratively market kiwifruit.