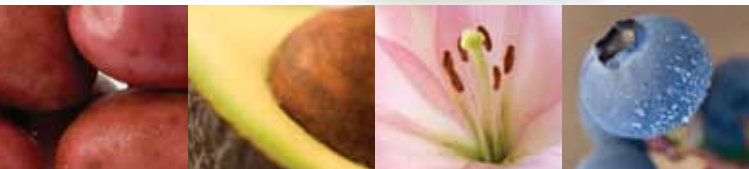




# *Fresh*Facts

NEW ZEALAND HORTICULTURE

2009





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Reporting basis: unless stated otherwise, all statistics are for the year ending 30 June 2009 and expressed as \$NZ. Exports are given as free-on-board (fob) values. Imports are given as cost, insurance and freight included (cif). Historical values have not been adjusted for inflation.

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# New Zealand horticulture - Sustainable success

*The performance of New Zealand's horticultural industries in 2009 marks a milestone year as exports reached \$3.4 billion almost doubling in the decade since 1999 when NZ horticultural exports were \$1.74 billion. Added to the current estimate of domestic consumption, the value of crops from our horticultural industries are estimated to be \$6 billion for the first time.*

*Two crop types stand out over the past decade:*

- *Kiwifruit exports have increased from less than half a billion (\$478m) to over one billion (\$1.072bn).*
- *Grape wine exports have increased from just \$126m in 1999 to now be close to \$1 billion (\$985m in the year to June 2009).*

*In the same decade, vegetable exports (fresh & processed) increased from \$403m to \$563m and flowers and horticultural seeds from \$99m to \$137m.*

*These impressive results have been due to the skills and dedication of many people and the systems and technological improvements in almost every facet of New Zealand's horticulture. These improvements include: new varieties of fruit, vegetables and flowers, sustainable production systems, harvesting methods, handling, packaging, storage and transport technologies, and export marketing.*

*Expert science and technology supports most parts of horticulture and Plant & Food Research, in cooperation with others, is pleased to play a lead role in much of this work.*

Peter Landon-Lane  
CEO, Plant & Food Research



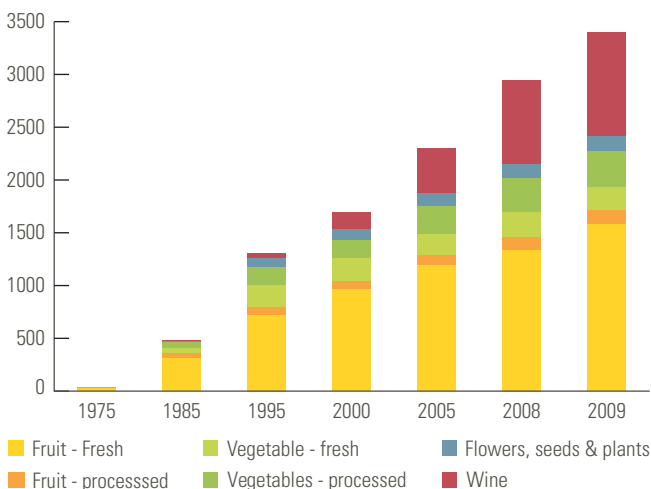
# Exports

## Horticultural exports (\$ million, fob)

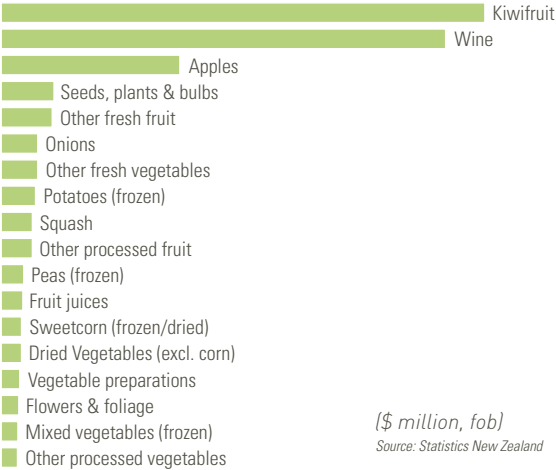
Year ended June	1975 <sup>a</sup>	1985 <sup>a</sup>	1995 <sup>b</sup>	2005 <sup>b</sup>	2008 <sup>b</sup>	2009 <sup>b</sup>
<b>Fresh fruit</b>						
- Apples	19.3	108.2	343.6	387.0	344.9	395.7
- Kiwifruit	2.9	171.9	320.8	720.2	870.7	1071.7
- Other fresh fruit	0.8	28.4	57.6	80.5	122.0	113.1
<b>Total fresh fruit</b>	<b>23.0</b>	<b>308.5</b>	<b>722.0</b>	<b>1187.7</b>	<b>1337.6</b>	<b>1580.5</b>
<b>Processed fruit</b>						
- Wine	0.1	3.0	42.0	432.7	793.7	984.5
- Juices - fruit	0.1	9.6	30.5	34.5	39.0	48.4
- Other processed fruit	1.7	40.3	44.3	67.3	83.4	81.5
<b>Total processed fruit</b>	<b>1.9</b>	<b>52.9</b>	<b>116.8</b>	<b>534.5</b>	<b>916.1</b>	<b>1114.4</b>
<b>Fresh vegetables</b>						
- Onions	1.2	17.7	92.6	61.6	91.5	76.3
- Squash		14.6	57.7	72.1	69.8	69.3
- Other fresh vegetables	1.9	11.6	49.8	65.3	74.5	81.1
<b>Total fresh vegetables</b>	<b>3.1</b>	<b>43.9</b>	<b>200.1</b>	<b>199.0</b>	<b>235.8</b>	<b>226.7</b>
<b>Processed vegetables</b>						
- Peas (frozen)	1.5	22.0	34.3	36.6	56.0	49.8
- Potatoes (frozen)			14.1	54.3	63.7	81.0
- Sweetcorn (frozen/dried)	0.8	9.5	30.6	42.7	46.2	45.4
- Mixed vegetables (frozen)		4.6	23.9	36.0	41.3	37.1
- Dried vegetables				25.5	34.8	45.2
- Vegetable preparations				39.4	41.1	41.4
- Other processed vegetables	2.4	20.9	75.6	29.8	33.7	36.2
<b>Total processed vegetables</b>	<b>4.7</b>	<b>57.0</b>	<b>178.5</b>	<b>264.3</b>	<b>316.8</b>	<b>336.1</b>
<b>Other Horticultural exports</b>						
Flowers & foliage	0.2	10.5	49.9	38.5	39.2	38.6
Seeds, plants & bulbs etc	0.6	2.1	17.4	72.3	92.8	98.5
Sphagnum moss		6.3	17.3	8.8	5.5	5.5
<b>Total exports in current \$</b>	<b>33.5</b>	<b>481.2</b>	<b>1,302.0</b>	<b>2,305.1</b>	<b>2,943.8</b>	<b>3,400.3</b>
<b>Horticultural exports</b>						
as % of NZ merchandise exports.	2.0	4.4	7.0	7.4	7.3	7.8

Source: <sup>a</sup>Bollard (1996) <sup>b</sup>Statistics New Zealand <sup>\*</sup>Estimate

## Horticultural exports (\$ million, fob)



**Horticultural exports 2009** *(Year to June, \$ million, fob)*

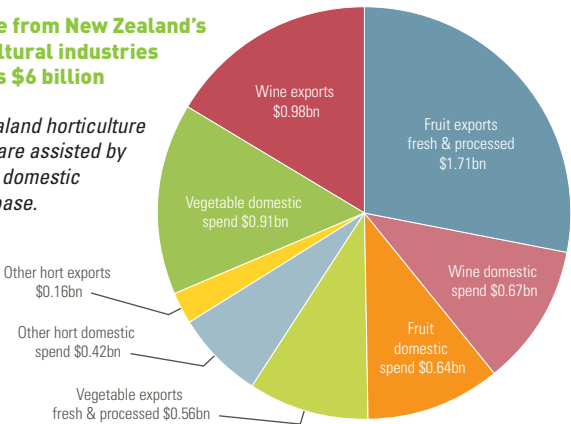


*(\$ million, fob)*  
*Source: Statistics New Zealand*

- Total horticulture merchandise exports increased in fob value by 15.5% (\$456.5m) over 2008.
- The 2009 level is an increase of \$1.4 billion (70%) in six years from the 2003 level of \$2.0 billion in NZ horticultural exports.
- 2009 Total Fruit exports (incl. grape wine) increased by \$441.7m (19.7%) over 2008, with Fresh Fruit up by \$242.9m (+18.2%).
- New Zealand's two stand out horticultural produce exports increases were kiwifruit increasing by \$201.0m (+23.1%) and Wine exports by \$190.8m (+24.0%).
- Fresh vegetable exports fell \$9.1m against 2008, predominantly due to fresh onions exports reducing by \$15.2m.
- Processed vegetables increased by \$19.3m (6.1%) with frozen potato exports up \$17.3m (+27.2%) and dried vegetables up \$16.0m (+37.5%) to \$58.7m (dried peas \$35.5m) offsetting decreases in other processed vegetables.

**Produce from New Zealand's horticultural industries exceeds \$6 billion**

*New Zealand horticulture exports are assisted by a strong domestic market base.*



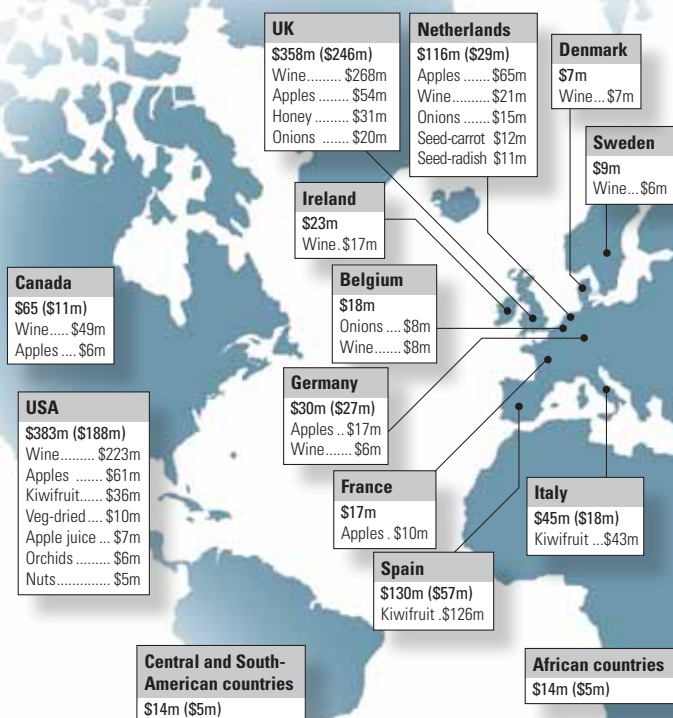
Source: Statistics New Zealand plus domestic market figures derived from triennial Household Economic Survey (HES) 2007 adjusted to 2009 estimate of number of households

# Export destinations

## Horticulture helps build New Zealand's profile in many overseas markets.

### Export destinations for New Zealand horticultural products – trends since 2000 (\$ million, fob)

- Fruit, vegetables and flowers were exported to 122 countries in 2009, up from 118 in 2008 and 114 in 2000.
- Exports to 52 countries exceeded \$1m in 2009, up from 42 in 2000. Of these, exports to 26 countries exceeded \$10m, up from 16 in 2000.



### Reference

Countries shown are those defined as the export destinations.

*Note that there are exports to the European Union as well as direct exports to countries within the EU such as the Netherlands, Spain and Germany.*

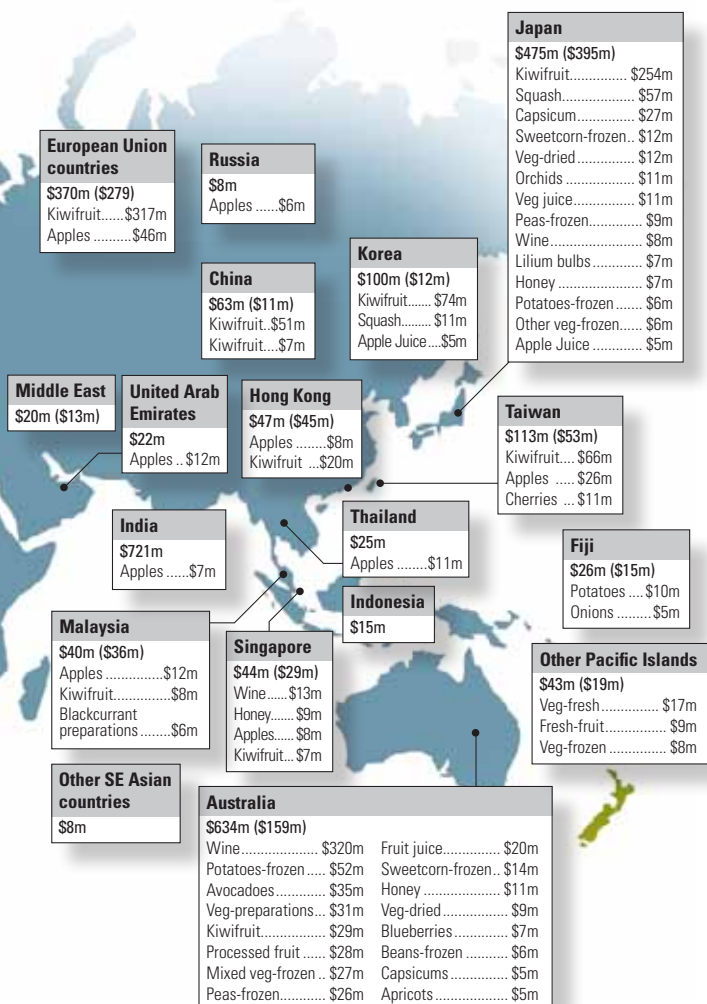
**Values following the country name are for 2009 (and those in brackets for 2000).**

Entries only included if value to a destination exceeds NZ\$5 million.

## Trends

- New Zealand fruit and vegetable exports to five markets exceeded \$300m fob value: Australia, Japan, United Kingdom, European Union and the USA.
- These five export markets account for over \$2.2 billion (66.7%) of New Zealand's total horticultural exports in 2009.
- Horticultural exports to Australia increased by 9% from \$588m to \$634m with wine increasing \$75.4m, whereas other horticultural exports fell \$23.4m from 2008 levels.
- Horticultural exports to China from New Zealand doubled from \$32m in 2008 to \$63m in 2009, predominantly in kiwifruit.

Source: Statistics New Zealand



## Grape and wine production 2008-09

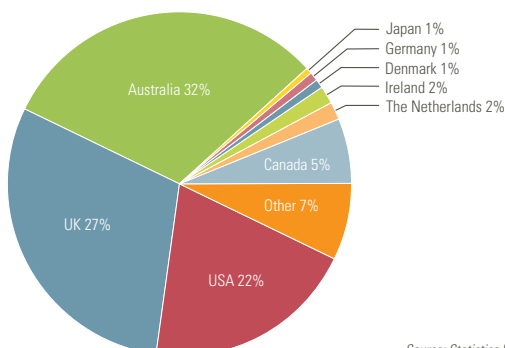
Variety	Production area (ha)		Production (tonnes)	
	1999	2009*	1999	2009
Sauvignon Blanc	2,008	14,735	20,580	177,647
Chardonnay	2,449	3,915	17,823	34,393
Pinot Gris	90	1,460	411	11,410
Reisling	432	928	3,462	6,316
Gewurtztraminer	103	316	493	2,123
Other white vinifera	954	380	16,952	3,299
Pinot Noir	826	4,702	4,844	27,547
Merlot	535	1,367	3,252	11,723
Cabernet Sauvignon	653	517	3,723	2,304
Syrah	51	290	192	1,500
Other red vinifera	225	396	1,567	2,663
Muscat varieties	191	125	3,885	1,505
Other and unknown	483	1,926	116	17
<b>Total</b>	<b>9,000</b>	<b>31,057</b>	<b>77,300</b>	<b>282,447</b>

Region				
Auckland/Northland	345	550	977	1,763
Waikato/Bay of Plenty	100	147	334	202
Gisborne	1,447	2,153	23,649	23,093
Hawke's Bay	2,336	4,928	22,751	40,985
Wairarapa	281	871	804	4,421
Marlborough	3,477	16,682	25,558	192,128
Nelson	175	842	898	7,740
Canterbury/Waipara	363	1,754	960	5,476
Otago	207	1,540	605	6,218
Other and unknown	269	1,590		421
<b>Total</b>	<b>9000</b>	<b>31057</b>	<b>76,536</b>	<b>282,447</b>

Source: New Zealand Winegrowers Statistical Annual Report 2005 and 2009.

\*forward estimate

## Wine exports by variety and country 2009 [% by value]



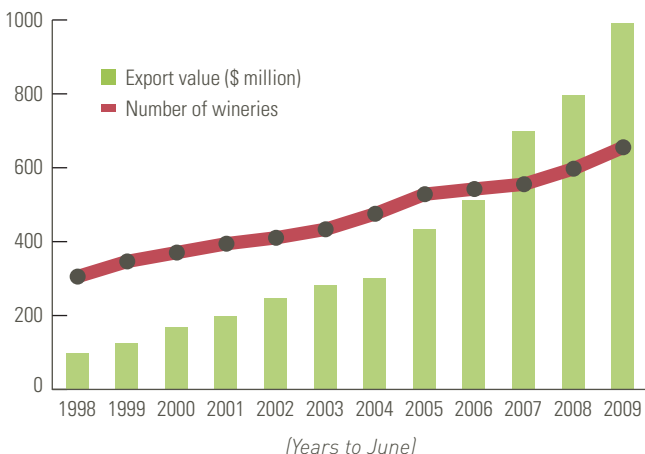
Source: Statistics New Zealand

- New Zealand wine exports increased to \$985m in 2009, up from just \$126m in 1999, and up 22% on 2008. New Zealand wine was exported to 95 countries in 2009.
- Major markets taking 83% of New Zealand wine exports were Australia (\$320m; up 31% on 2008), UK (\$268m; up 12% on 2008), and the USA (\$223m; up 40% from 2008).
- The grape harvest was 285,000 tonnes, the same as 2008.



- Total wine sales reached 172 million liters, up 27% from 135 million litres in 2008.
- Sauvignon Blanc (81%), Pinot Noir (6%) and Chardonnay (4%) are the dominant export wines, with Pinot Gris increasing by 67% from 2008.
- Sauvignon Blanc (44%), Pinot Noir (14%) and Chardonnay (11%) are the dominant varieties planted, with total planted area up 3.3 fold from 1999, and up 8% from 2008.
- Marlborough produced 68% of grapes crushed in 2008, with 15% from Hawke's Bay and 8% from Gisborne.
- The number of wineries increased to 643 (585 in 2008) and the number of grape growers in 2009 was 1,128 (1,073 in 2008).

### Growth in wine exports and wineries 1998 to 2009



Source: BNZ Statistical Annual, 2000 to 2002; New Zealand Grape & Wine Industry Statistical Annual 2003; New Zealand Winegrowers, 2004 to 2009.

### Grape yield model proves accurate once again.

Sauvignon blanc grapes account for more than 80% of the wine volume exported by New Zealand each year. The quality of the grapes produced is therefore critical to the success of New Zealand's billion dollar wine industry. Yet excessive crop load can dilute the constituents that make New Zealand grown grapes so unique or even prevent the fruit from reaching suitable ripeness.

For the past two seasons, the Grape Yield Model, developed by scientists at the Marlborough Wine Research Centre in Blenheim has been helping growers predict the upcoming Sauvignon blanc harvest in Marlborough. The model predicts crop yield based on the summer temperatures during the two years prior to harvest. Fifteen months prior to harvest, day and night temperatures during December and early January are used to estimate bunch numbers. A year later, during the same period, the temperature data is used to refine the prediction and estimate bunch weights.

Work is currently underway to adapt the model to allow for other varieties and terroirs throughout the country in order to provide growers with the means to predict the impending cropload and manage yields and ensure high quality grapes are consistently produced and supplies are matched to industry demands.

## Apple Statistics 2009

Year ending 30 June	1999	2004	2005	2006	2007	2008	2009
Crop volumes ('000 tonnes)							
Apples produced	547	501	474	354	421	446	431
Fresh apples exported	309	367	322	268	295	261	307
General statistics							
Yield (tonnes/ha)	37.6	41.2	40.5	39.3	47.1	50.6	48.0
Area planted (ha)	14,541	12,150*	11,700*	9,000	8,945	8,832	8,988
Growers (No.)	1,500	917	920	680	520	509	518
Packhouses (No.)	150	102	85	74	74	70	76

\* Estimate only.

Source: Pipfruit New Zealand

## Apple Futures roll-out Programme

The pipfruit sector is now into the final year of the three year Apple Futures roll-out programme, following two very successful years in which results achieved in the project have far exceeded plans.

After only two years, the sector has close to 60% of all orchardists registered for Apple Futures, and growers in the project team have:

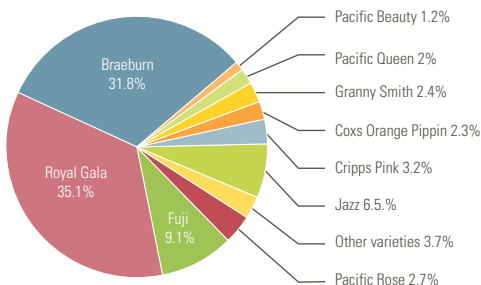
- Met or bettered targeted residue levels, with few understandable exceptions.
- In the process, have maintained quality, yield and packhouse performance.
- Identified no abnormal storage results from 'library' samples.
- Made good progress towards building a predictive residue model.

Results to date confirm that New Zealand growers can produce apples and pears with residues well below levels required in key markets that have very restrictive acceptability criteria.



- Fresh apples valued at \$396m were exported to 68 countries in the year to June 2009. Export volumes were 8% up on 2008 and export value was up 15%. Exports of apple preparations and juice were a further \$37m.
- Processed volumes were similar to 2008 but their value dropped dramatically due to commodity clear apple juice concentrate prices crashing to under half the 2008 level.
- 51% of exported apples by value were to EU countries (including UK), 24% to Asia and 17% to North America. Apple exports to 26 countries exceeded \$1m.
- There were 95 exporters in 2009, with 37 exporting more than 1,000 tonnes.
- Royal Gala was the dominant export variety (35%) closely followed by Braeburn (32%) with no other variety exceeding 10% of exports.
- Grower numbers have declined by 66% since 1999 and the number of packhouses has decreased by 39% since 2002.

## Apple exports by variety - 2009 (Weight basis)



Source: Pipfruit New Zealand

- New Zealand ranks 3rd (down from 2nd in 2007) behind Chile and Italy among 29 apple producing countries in overall competitiveness in 2009. This ranking is based on 22 criteria across three categories: (i) production efficiency, (ii) infrastructure and inputs, and (iii) financial and markets. (Source: World Apple Review 2009).
- The median consumption of apples by New Zealanders over the last 20 years is around 15kg per person. This is three times the median consumption (5kg) of apples per person within all Southern Hemisphere countries over the same period.

## New Pears - Breeding the Perfect Pear

New crisp juicy pears, rich in flavour, with a red skin colour, classic pyriform shape, resistant to fire blight with long shelf life that don't require chill induction to ripen – that's the ultimate goal of the plant breeders working to develop new pear cultivars.

The ambitious goal is being achieved by utilising European, Japanese and Chinese germplasm and many third generation families now incorporate all three species.

Trained fruit tasters have identified a wide range of flavours in families evaluated, including traditional pear, tropical, tropical pear, coconut, Chinese aromatic, aniseed, apple, peach, apricot, vanilla, melon, plum, mango and pineapple.

The red skin colour has been bred from several sources but the European pear 'Max Red Bartlett' and the bright red colour from the Chinese pear 'Huobali' are demonstrating the best success.

Currently eight selections are being evaluated for commercial production by PREVAR™ including European pears, Asian types with red skin colour and interspecific hybrids with pear flavour.

For further information see [www.prevar.co.nz](http://www.prevar.co.nz)



## Kiwifruit industry statistics

Season (ends 31 March)	1999	2004	2005	2006	2007	2008	2009
Crop volumes (million)							
Trays submitted*	63.1	66.1	85.8	87.8	90.0	102.0	109.4
Trays sold	59.4	64.6	79.7	82.3	80.1	92.4	99.9
General Statistics							
Yield (trays/ha)	6,305	6,247	7,847	7,655	7,514	8,371	8,866
Area planted <sup>#</sup> (ha)	10,015	10,580	10,934	11,464	11,967	12,186	12,337
Growers/suppliers <sup>‡</sup> (no)	2,681	2,703	2,760	2,748	2,754	2,727	2,710
Packhouses (no)	118	98	88	83	80	75	71
Coolstores (no)	106	86	89	85	87	83	92
Orchard Gate Return (\$)	38,500	38,488	34,738	28,687	32,566	28,169	35,655

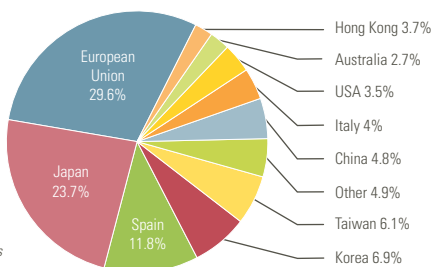
A tray weighs 3.6kg. \* This figure refers to submitters. <sup>#</sup> Producing hectares <sup>‡</sup> Refers to number of submitters

Source: Zespri International Ltd Annual Reports 2001, 2008 and 2009.

- New Zealand exports of kiwifruit were valued at \$1,072m in 2009, up 23% from \$871m in 2008 (for the year ending 31 June). Total export volume was 376.8 thousand tonnes (104.7 equivalent to million trays (TEs). Kiwifruit exports to 21 countries exceeded \$1m fob.
- ZESPRI Group Limited global sales comprised 109 million trays with 100 million trays from New Zealand and 8.7 million sourced abroad. The ZESPRI-sourced crop included 72.7 million trays of ZESPRI® GREEN, 21.9 million trays of ZESPRI® GOLD, 2.9 million trays of ZESPRI® GREEN ORGANIC and 2.5 million trays of other kiwifruit.
- Global sales of non-New Zealand sourced kiwifruit were 8.7 million trays (up 55% from 2007-2008), comprising 4.2 million trays of ZESPRI® GREEN (up 68%) and 4.5 million trays of ZESPRI® GOLD (up 45%).
- The average Orchard Gate Return was \$35,655 per production hectare (up 27% from 2007-2008), comprising \$30,067 for ZESPRI® GREEN (up 25%), \$39,441 for ZESPRI® GREEN ORGANIC (up 14%) and \$60,885 for ZESPRI® GOLD (up 32%).
- Kiwifruit production area in 2008/2009 increased to 9,766 ha for ZESPRI® GREEN (up 1%), increased to 480 ha for ZESPRI® GREEN ORGANIC (up 4%) and increased to 2,091 ha for ZESPRI® GOLD (up 2%).
- Overall yield of kiwifruit was 8,866 tray equivalents (TE) per ha (up 6% from 2007-2008); average TEs per producing hectare was 7,649 for ZESPRI® GREEN (up 6% from 2007-2008), 6,088 for ZESPRI® GREEN ORGANIC (up 23.6%) and 10,761 for ZESPRI® GOLD (up 12% from 2005-2006).
- Italy, China, New Zealand, Chile and France were the top kiwifruit producing countries in 2007-2009 producing 1.5 million tonnes and 88% of kiwifruit produced.

(Source: World Kiwifruit Review 2009).

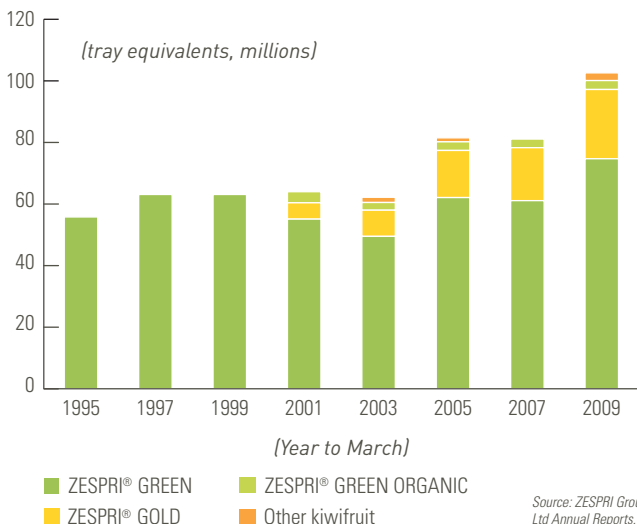
## Major kiwifruit export markets (year to 30 June 2009, % by value)



Source: Statistics New Zealand



### ZESPRI production profile 1995 to 2009 (tray equivalents, millions)



### New Kiwifruit Consortium to fast-track new kiwifruit

A new investment by ZESPRI Group Limited and the Foundation for Research, Science and Technology is set to significantly accelerate the development of new kiwifruit varieties, differentiated by their appearance, sensory or health attributes.

The cash injection of \$35.7 million over seven years will enable ZESPRI and Plant & Food Research to significantly up-scale their joint kiwifruit breeding programme with hopes of emulating the success story of ZESPRI® GOLD Kiwifruit.

ZESPRI® GOLD Kiwifruit, a product of the existing breeding programme, is currently worth over \$468 million in global revenues annually, and a benchmark for all new cultivar R&D.

The new investment makes this largest, most rigorous and exacting kiwifruit R&D programme in the world, and will provide growers with comprehensively tested fruit cultivars designed to ensure new generations of New Zealand kiwifruit remain the best in the world.

# Sector profiles

## Other fresh and processed fruit

Sales value (\$m)

Crop areas as at 30 June 2005	Growers <sup>a,b</sup> (no.)	Planted area <sup>a,b</sup> (ha)	Crop volume <sup>b</sup> (tonnes)	Domestic <sup>b</sup> 2004/09	Export <sup>c</sup> (fob) 2009
Avocados	1,481	5,010	14,859	17.9	38.4
Berryfruit	240	2,686	18,230	58.9	18.4
- Blackcurrants	52	1,450	6,090	3.6	
- Boysenberries	55	274	2,000	4.8	
- Raspberries	60	150	945	3.0	
- Blueberries	95	522	2,813	25.6	13.4
- Strawberries	100	170	5,882	21.3	5.0
- Other brambles		120	500	0.6	
Citrus	450	1,834	44,650	45.0	5.1
- Grapefruit		41	1,150		
- Lemons	100	332	13,000	10.0	1.8
- Mandarins	334	691	16,000	21.0	2.8
- Oranges	220	681	12,000	11.0	0.4
- Tangelos		89	2,500		
Feijoa	200	251	500	1.7	0.2
Grapes - table		37			0.5
Hops	15	370	830		
Kiwiberries		27	163	0.2	1.2
Melons		259			0.1
Nashi	90	97	1,400	1.2	0.1
Nuts		1484			
- Chestnuts	100	310	200		
- Macadamias		242			
- Walnuts		498			
- Hazelnuts		434			
Olives	400	2,173	1,600		
Passionfruit	90	47	240		0.6
Pears		694			9.1
Persimmons	88	180	3,420	1.0	7.6
Summerfruit	337	2,294	14,452	41.0	30.1
- Apricots		457	3,497	7.0	7.5
- Cherries		520	2,632	10.0	21.9
- Nectarines		377	3,298	9.0	0.2
- Peaches		527	3,053	8.0	0.1
- Plums		413	1,972	7.0	0.4
Tamarillos	69	194	740	1.8	0.4
Other fruit		44			1.3
Total fresh fruit (excl. Kiwifruit, Grape Wine, Apples)					113.1

Sources: <sup>a</sup>Statistics New Zealand - Agricultural Production Census 30 June 2007, <sup>b</sup>Sector estimates and MAF Sector Monitoring Reports to 2009, <sup>c</sup>Statistics New Zealand. \*Author's estimate. Blank entries indicate either that the information is not available or items are valued at less than \$100,000.

- Summerfruit exports increased from \$21.3m in 2008 to \$30.1m in 2009.
- Apricots experienced good growing conditions and quality fruit resulting in an export volume increase of over 40% of which over 70% went to Australia to fill market demand from their reduced domestic production.  
(Source: MAF Sector Monitoring Reports, 2009)
- Exports of cherries increased to 1,520 tonnes, the highest in the past five years.  
(Source: MAF Sector Monitoring Reports, 2009)

**Processed fruit**

	Sales value (\$m)	
	Domestic <sup>b</sup> 2004/09	Export <sup>c</sup> (fob) 2009
Apple juice	45.9	30.6
Avocado oil	0.2	2.0
Other fruit juices	92.1	15.1
Other fermented beverages		2.5
Dried fruit		0.6
Frozen fruit		9.6
- Blackcurrants		3.0
- Blueberries		1.0
- Boysenberries		4.1
- Kiwifruit		1.1
- Raspberries		0.2
Fruit preparations		26.3
- Apples		6.3
- Blackcurrants		15.2
- Kiwifruit		1.0
- Fruit mixture preps.		0.8
- Pear		0.6
Hops	0.8	12.3
Jams, jellies and purees		23.7
Nuts		6.6
Olive oil	2.3 <sup>b</sup>	0.6
<b>Total processed fruit</b>		<b>129.9</b>

*Fruit used for processing is produced on the orchard areas described in the fresh fruit table*

- Avocado exports reduced from 15,045 tonnes to 7,721 tonnes predominantly due to yield falling from yields reflecting a biennial bearing pattern with light crops following heavy crops. (Sources: Statistics New Zealand and MAF Sector Monitoring Reports, 2009)
- Blackcurrants - outside Europe, New Zealand is the largest supplier with 3% of global production however severe frost damage in both North and South Islands growing areas resulted in production being down 40% on recent past seasons. (Source: Blackcurrants NZ Ltd) See also [www.blackcurrant.co.nz](http://www.blackcurrant.co.nz)

## New research highlights sports recovery potential in blackcurrants

Researchers have found signs that an extract derived from New Zealand-grown blackcurrants - taken in capsule form before and after exercise - has three potential effects: minimising muscle damage by modulating oxidative stress, modulating inflammation and potentially enhancing the body's natural defences against disease.

Negative impacts from sustained sports training is a growing health issue. While exercise is universally agreed to be healthy, extreme exercise – such as intense pre-event training - can have some drawbacks, including lowering the body's immune defences and the increasing risk of muscle damage.

The positive link between blackcurrants and exercise has been previously highlighted in studies in Japan where scientists evaluated the ability of New Zealand-grown blackcurrants to reduce inflammation in muscle groups related to sustained computer use and keyboard typing and flagged the potential of blackcurrants to reduce lactic acid build-up in muscles.

# Sector profiles

## Exports of flowers, plants, seeds and other products (\$ million, fob)

Selected HS Items	1985	1990	1995	2000	2005	2009
Cut flowers						
- Chrysanthemums					0.2	0.2
- Hydrangeas					2.8	2.9
- Lilium			1.5	1.9	0.4	0.2
- Nerines				0.6	0.6	0.2
- Orchids	2.8	8.2	14.6	22.4	18.4	22.2
- Paeonies				0.5	1.2	1.5
- Pittosporum					0.4	1.2
- Proteaceae	0.3	0.5	1.5	1.4	1.1	0.8
- Sandersonia		0.2	5.6	3.1	0.8	0.2
- Zantedeschia (Calla Lily)		1.9	6.6	7.7	5.5	4.7
- Other Foliage	2.9	0.7	0.2	0.6	0.3	0.9
- Other cut flowers	4.6	7.8	19.9	8.5	7.0	3.8
Plants						
- Other live plants	6.3	2.5	3.5	5.6	14.5	8.5
Seeds						
- Flower seeds	0.5	<0.1	0.3	2.1	0.3	0.2
- Fruit seeds					0.4	2.1
- Cabbage seeds					3.2	3.2
- Carrot seeds					6.8	15.3
- Radish seeds					11.7	20.9
- Other veg seeds	1.2	2.1	7.3	15.9	8.5	16.2
- Tree seeds				1.6	0.6	1.8
Bulbs, tubers, corms						
- Lilium					9.4	14.3
- Sandersonias					2.2	1.3
- Tulips					6.4	9.9
- Zantedeschia (Calla Lily)				1.5	5.4	4.3
- Others	0.2	2.0	6.3	10.1	1.8	0.5
Sphagnum moss		11.0	17.3	15.3	8.8	5.5*
<b>Total</b>	<b>18.8</b>	<b>36.9</b>	<b>84.6</b>	<b>98.8</b>	<b>118.7</b>	<b>142.6</b>

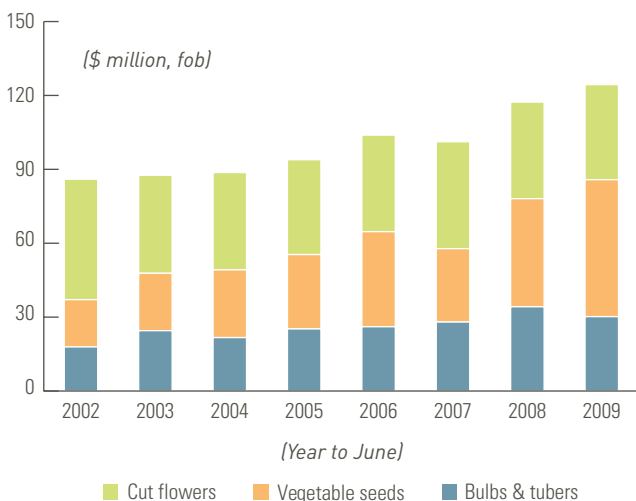
The term "bulbs" is used to include bulbs, corms, tubers, tuberous roots, crowns & rhizomes. \* Estimate only.

Source: Statistics New Zealand.

- New Zealand's largest export markets for cut flowers were Japan \$19.6m and the USA \$8.7m. Of the 44 other markets to which NZ cut flowers were exported, only four exceeded \$1.0m fob: Canada \$1.6m, Hong Kong \$1.5m, Netherlands \$1.4m, and United Arab Emirates \$1.1m.
- 51% of orchids by fob value were to Japan and 26% to USA. Of the 39 other markets orchids were exported to, Canada was the next largest market at 5.3% of the total value of orchid exports.
- Total 2009 horticultural seeds exported had a value of \$59.8m fob, an increase of 27% over 2008 horticultural seed exports of \$47.2m.
- 2009 vegetable seed exports were \$55.6m fob, compared to \$23.3m fob in 2003.
- At \$30.2m, 2009 exports of bulbs, tubers and corms have almost doubled since 2003 (\$17.9m fob), although export value of bulbs in 2008 was \$34.2m.  
(Source: Statistics New Zealand)
- As at 30 June 2007 New Zealand had 597 farms growing cut flowers and flower seeds.  
(Source: 2007 Agricultural Production Census, Statistics New Zealand)



## Exports of flowers, seeds and bulbs (\$ million, fob)



Source: Statistics New Zealand

- New Zealand's export flowers industry developed in the 1960s around the Cymbidium Orchid and New Zealand soon became recognised for its ability to supply high quality blooms in the northern hemisphere's off season. Cymbidium is the largest flower variety exported, but commercial growing for export has also evolved in Calla, Sandersonia, Nerines, Lilies and Paeonies. (Source: New Zealand Flower Exporters Association)
- Approximately eight exporters handle 95% of New Zealand's flower exports. (Source: New Zealand Flower Exporters Association)

For more information visit [www.nzflowers.com](http://www.nzflowers.com)

## CropLogic™

In an era where the excessive application of fertilisers is a well recognised issue, and irrigation water worldwide is in increasing short supply, accurate knowledge of a crops needs has become vital for growers.

CropLogic™, an online decision support tool, is designed to predict the water and nitrogen requirements of a crop in advance of its need. It was developed following farmers' interest in a practical but effective method to help them schedule irrigation and nitrogen for optimal yield.

The system uses crop specific information alongside weather and soil texture data to calculate the minimum inputs required without affecting crop yield. In addition to the immediate cost savings experienced by growers, the environment is also benefiting from the tools use, with potential eutrophication and fertiliser leaching issues greatly reduced.

CropLogic is currently available in the USA, Australia and New Zealand (used by farms from 40 to 4000 hectares) with other countries set to be added following growing trials designed to allow particular environment and/or variety related modifications to be made.

For more information visit [www.croplogic.com](http://www.croplogic.com)



# Sector profiles

## Fresh and processed vegetables

Sales value (\$ million, fob)

	Growers <sup>c</sup> (no.)	Planted area (ha)	Crop volume <sup>c</sup> (tonnes)	Domestic <sup>c</sup> 2005/09	Exports 2009 Fresh Processed <sup>b</sup>	
Asparagus	90	570 <sup>c</sup>	2,052	10.0*	4.1	
Beans	184	724	20,000	12.8		8.0
Brassicas	260	3,875	82,000	80.3	1.5	
- Broccoli	150	2,247	18,000			
- Cabbage	150	768	40,000			
- Cauliflower	120	860	24,000			
Capsicums	80	56	11,500	29.3	36.1	
Carrots	50	1,150 <sup>c</sup>	80,000	30.0*	9.8	0.8
Cucurbits	200	283 <sup>c</sup>	1,770			
Garlic	28	268 <sup>c</sup>	1,427	6.5	0.6	
Kumara	75	1,264	17,500	33.8		
Lettuce - outdoor	80	1,309		41.8	1.1	
Lettuce - greenhouse	70	22				
Melons	46	259			1.2	
Mushrooms	21	42 <sup>c</sup>	8,500	41.1	1.6	
Onions	108	4,657	144,300	25.0	76.3	
Peas	600	10,720 <sup>c</sup>	59,000	50.0		85.3
Potatoes	225	9,787	487,000	516.0	15.9	83.1
Pumpkin	129	1,066	31,000			
Shallots	10	25			1.2	
Silverbeet/Spinach	94	306	4,000	13.4		
Squash	63	6,601	85,000	2.9	69.3	
Sweetcorn	256	5,800 <sup>c</sup>	100,000	10.0*	0.1	45.5
Tomatoes - greenhouse	300	100	40,000	108.0	6.6	
Tomatoes - outdoor	20	757	50,000	5.0		3.6
Mixed vegetables		Made from combinations of the above crops				37.1
Dried vegetables						8.4
Vegetable preparations						41.4
Vegetable juices						11.9
Other Vegetables <sup>a</sup>		2,609			2.7	10.9
<b>Total</b>	<b>3,409<sup>d</sup></b>	<b>52,250</b>			<b>228.1</b>	<b>336.0</b>

Crops areas as reported in June 2007 Census or as updated by later sector estimates <sup>a</sup>Includes taro, celery, parsnips, spring onions, Asian vegetables (excl. Chinese cabbage), yams, witloof, leeks, vegetable shoots, shallots, swedes and some others. <sup>b</sup>Processing includes freezing, canning, juicing and artificial drying. <sup>c</sup>Sector estimates. Blank entries indicate that the information is not available. <sup>d</sup>Many growers produce multiple crops.

Sources: Statistics New Zealand - Agriculture Census 2007; Horticulture NZ, MAF Sector Monitoring Reports to 2009.

- Fresh vegetable exports are dominated by onions, squash and capsicums, which collectively are almost 80% of total fresh vegetable exports (fob value).
- Carrot production of 80,000 tonnes includes over 30,000 tonnes juiced for export (source: HortNZ).
- For fresh potato growers, a combination of below average yields (typically down 18%) increased cost and lower prices resulted in losses for many growers.
- Frozen potato exports increased from \$63.7m to \$81.0m in part reflecting higher prices paid to growers in order to secure supply against more profitable land use options.
- Onion exports fell from \$91.5m to \$76.3m due to yields down 14% to 20% and weaker export demand for New Zealand traditional export markets in UK and continental Europe due to large onion crops in UK and Netherlands.

### Vegetable exports 2000 to 2009 (\$ million, fob)



Source: Statistics New Zealand

- For squash, a 13% increase in export earnings per tonne fob was offset by reduced dry weather conditions increasing the portion of crop not suitable for export.
- For asparagus exporters a depreciating NZ dollar against the Japanese yen helped increase market volume and value improving grower gross margins by 144% and fob export value increasing from \$2.5m (2008) to \$4.1m in 2009.
- Whilst capsicum export volumes fell 20% below 2008 volumes, an increase in fob value per kg from \$4.85 to \$7.17 meant the value of NZ capsicum exports increased from \$30.5m in 2008 to \$36.1m in 2009.
- Frozen sweetcorn exports fell from \$38.3m to \$32.0m.
- Dried vegetable exports increased from \$42.7m to \$58.7m.
- 2009 dried pea exports increased by almost \$10m over 2008 to \$35.4m.

Sources: statistics: Statistics New Zealand; market commentaries: MAF Sector Monitoring Reports, 2009

### Vital Vegetables®

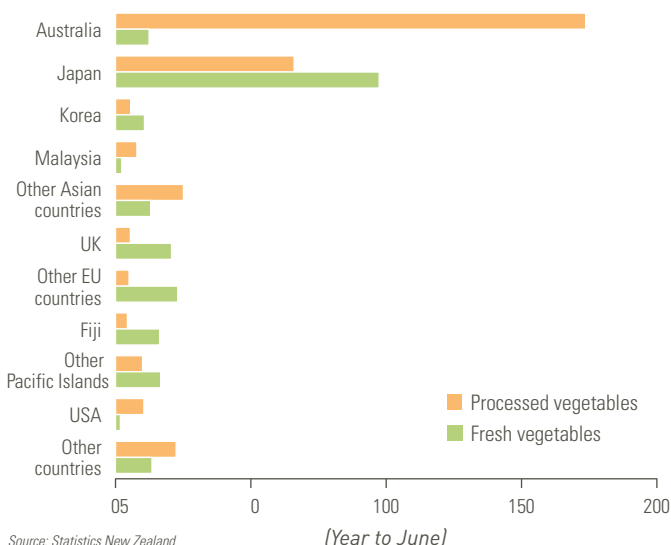
New Zealand scientists have teamed up with their Australian colleagues to create a new type of vegetable with added health benefits.

Vital Vegetables®, a joint research programme between the New Zealand and Australian horticultural industries, is looking at developing new vegetable cultivars with increased levels of healthy compounds such as antioxidants. These naturally-bred vegetables will be sold to consumers as a new class of fresh produce known as super vegetables.

The first of these products, Booster™ Broccoli, was launched on the Australian market in 2009. Other products are being investigated for launch on the Australian and New Zealand markets in the coming years.



## Destinations of vegetable exports 2009 (\$ million, fob)



## New Garden Pea cultivars

New garden pea cultivars with higher yields, increased disease resistance and superior quality are of great importance to the pea processing industry and New Zealand-bred pea seeds are enjoying increased demand in new territories.

The Joint Garden Pea Breeding Programme, between Plant & Food Research and industry partners PGG Wrightson Seeds and Heinz-Wattie's, focuses on breeding new pea cultivars with resistance to powdery and downy mildew and Fusarium wilt while presenting high tolerance to ascochyta.

Quality traits that differentiate the new cultivar releases include extending the fresh harvest period and creating varieties with a sieve size to suit market demands. Evaluations are also carried out through test factory runs and sensory panels selecting new cultivars on the basis of colour and appearance, texture and flavour.

New pea variety seeds such as 'Cawood', a triple pod variety with short vines, are well suited to heavier soils whereas others such as 'Wizzard', a double podded variety with longer vines, are better suited to lighter soils.

Pea seed from previous releases from this programme are successfully commercialised in NZ, and exported to Australia, South America and new cultivars are in advanced trials throughout Europe.



## Investment in the horticultural industries

	Crop area (ha)	On-farm (\$ million)	Off-farm (\$ million)
Apples, pears & nashi	9,779	908	908
Wine grapes	31,057	7,931	23,794
Kiwifruit	12,337	3,953	791
Summerfruit	2,294	121	121
Avocados	5,010	264	264
Citrus	1,834	96	96
Berryfruit	2,563	135	135
Nuts	1,484	78	78
Olives	2,173	114	114
Other subtropical fruit	995	52	52
Hops	354	35	106
Other fruit	44	2	2
<b>Total fruit</b>	<b>69,924</b>	<b>13,690</b>	<b>26,461</b>
Potatoes	9,787	300	450.4
Peas & Beans	11,444	351	702.2
Onions	4,657	143	142.9
Squash	6,601	203	202.5
Sweetcorn	5,800	178	355.9
Broccoli, cabbages & cauliflowers	3,875	119	118.9
Carrots	1,150	35	35.3
Asparagus	570	17	35.0
Lettuce	1,309	40	60.2
Other vegetables	6,403	196	294.7
<b>Total vegetables</b>	<b>51,596</b>	<b>1,583</b>	<b>2,398</b>
Protected - high tech	85	128	38
- greenhouse tomatoes	120	300	90
- low/medium tech	260	182	55
<b>Total horticultural</b>	<b>121,985</b>	<b>15,918</b>	<b>29,148</b>

Sources: Statistics New Zealand - Agricultural Production Census - 2007 + Industry figures.  
MAF Sector Monitoring Reports 2009 + estimates.

- Total investment in horticultural industries is calculated to be approximately \$45 billion.
- Calculated on a consistent basis, total investment in horticultural industries has decreased since 2008 by approximately \$3 billion, primarily due to the capital investment per hectare for wine producing areas falling by a calculated 15% and for kiwifruit by 6%. In both instances the basis for the calculation are MAF Sector Monitoring Reports model budgets. For wine producing areas, a weighted average for Hawkes Bay vs. Marlborough has been factored into the calculation.
- Also based on model budget calculations, other crop types are typically assessed to have increased capital investment, offsetting some of the decrease in the comparatively high on-farm investment per hectare in wine grapes and kiwifruit.
- Off-farm capital investment to package, process and transport the products to the nearest port and/or domestic market is calculated to be in excess of \$29 billion, which is close to double on-farm investment.

Regional Council	Apples	Wine grapes	Kiwi fruit	Summerfruit	Avocados	Citrus	Berryfruit	Nuts	Olives	Other subtropical	Other fruit & hops	Total fruit
Year ended 30 June	2007	2007	2007	2007	2007	2007	2007	2007	2007	2007	2007	2007
Northland	30	121	634	16+	1,325	324+	8+	92+	231	155+	34	2970+
Auckland	179	411	309	48+	130	153	161	187+	290	168	50	2086+
Waikato	228	133	782	34+	144	23	340+	61+	79	91+	36	1951+
Bay of Plenty	8	25	10,249	9+	2,210	119	45+	85+	56	159	41	13006+
Gisborne	190	1,812	284	2+	58	1003	C	C	6	92+	10	3457+
Hawke's Bay	5,206	4,930	220	895	31	20+	29+	3	317	217+	17	11885+
Taranaki	1	-	C	C	68	1+	C	C	C	27+	18	115+
Manawatu-Wanganui	35	10	138	10+	19	3+	18+	44+	C	78+	20	375+
Wellington	127	860	C	27+	8	1+	14+	39+	254	36+	39	1405+
Tasman-Nelson	2438+	805+	614	10+	9	1+	925+	22+	148	296+	13	5281+
Marlborough	25	17,169	C	67	C	C	2+	26+	240	27+	39	17595+
West Coast	-	-	-	0	-	C	C	C	C	3+	C	3+
Canterbury	249	1,683	C	122	C	1+	736	642+	437	30+	51	3951+
Otago	472	1,642	-	977	-	0	11+	144+	44	23+	12	3325+
Southland	C	C	-	C	-	C	C	30+	C	C	12	42+
Other/non allocated	59	15	20	77	2	185	208	109	71	98	6	850
<b>Total 2007</b>	<b>9,247</b>	<b>29,616</b>	<b>13,250</b>	<b>2294</b>	<b>4,004</b>	<b>1834</b>	<b>2,497</b>	<b>1,484</b>	<b>2,173</b>	<b>1500</b>	<b>398</b>	<b>68,297</b>
<b>2002</b>	<b>11,715</b>	<b>17,359</b>	<b>11,964</b>	<b>2,915</b>	<b>3,099</b>	<b>2,093</b>	<b>2,754</b>	<b>1,841</b>	<b>2,590</b>	<b>820</b>	<b>1,385</b>	<b>58,535</b>
<b>%</b>	<b>-21%</b>	<b>71%</b>	<b>11%</b>	<b>-21%</b>	<b>29%</b>	<b>-12%</b>	<b>-9%</b>	<b>-19%</b>	<b>-16%</b>	<b>83%</b>	<b>-71%</b>	<b>17%</b>

Major changes since 2002 census: wine grapes increased 12,257 ha (+71%); kiwi fruit increased 1,286ha (+11%); avocados increased 905 ha (+29%); olives decreased 417 ha (-16%) and nuts decreased 357 ha (-19%). C- Some data have been suppressed for reasons of respondent confidentiality. + incomplete data set due to some crop data being suppressed. Source: Statistics New Zealand Agricultural Production Census - as at June 2002 & 2007. Note: There may be some variations between the data reported in this section with those reported for the individual horticultural sectors. This is attributed to factors such as differences in sampling times, working definitions and the number of respondents. For some crops the planted areas have not reached full production.

## Distribution of vegetables by Regional Councils (area planted ha)

Regional Council	Potatoes	Peas & Beans	Onions	Squash <sup>e</sup>	Sweetcorn	Broccoli, Cab & Caulis	Carrots	Asparagus	Lettuce	Other veg	Total veg
Year ended 30 June	2007	2007	2007	2007	2007	2007	2007	2007	2007	2007	2007
Northland	31	C	C	25	35	35	3	C	13	1,418	1560+
Auckland	1,316	64	1,531	251	46	921	344	C	479	986+	5938+
Waikato	2,022	8	1,477	C	92	C	C	199	120	384+	4302+
Bay of Plenty	C	C	C	C	22	C	-	C	17	88+	127+
Gisborne	C	276+	C	2,773	1,798	C	-	C	C	60+	4907+
Hawke's Bay	491	1062	517	3,117	2,411	51	C	189	14	670+	8522+
Taranaki	18	C	-	-	C	C	C	C	C	C	18+
Manawatu-Wang.	1,578	4+	319	841	34	870	247	245	214	655+	5007+
Wellington	C	C	C	C	C	26	C	-	C	56	82+
Tasman-Nelson	39+	C	26+	C	14	148+	C	6	82+	171+	486+
Marlborough	C	676+	-	-	778	C	C	C	C	174+	1628+
West Coast	C	0	-	-	-	0	-	-	-	C	C
Canterbury	4,273	5242	686	C	941	520	488	94	47	631+	12922+
Otago	168	3+	C	-	C	221	C	C	44	3+	439+
Southland	63	C	-	-	-	11	C	-	C	233+	307+
Other	51	180	38	767	39	1,072	238	138	279	732	3534
Total 2007	10,050	7,515	4,594	7,774	6,210	3,875	1,320	871	1,309	6,261	49,779
2002	10,611	9,108	5,488	6,560	6,384	3,746	1,831	2,015	1,287	5,690	52,721
%	-5%	-17%	-16%	19%	-3%	3%	-28%	-57%	2%	10%	-6%

See above notes

For more information visit [www.maf.govt.nz](http://www.maf.govt.nz)

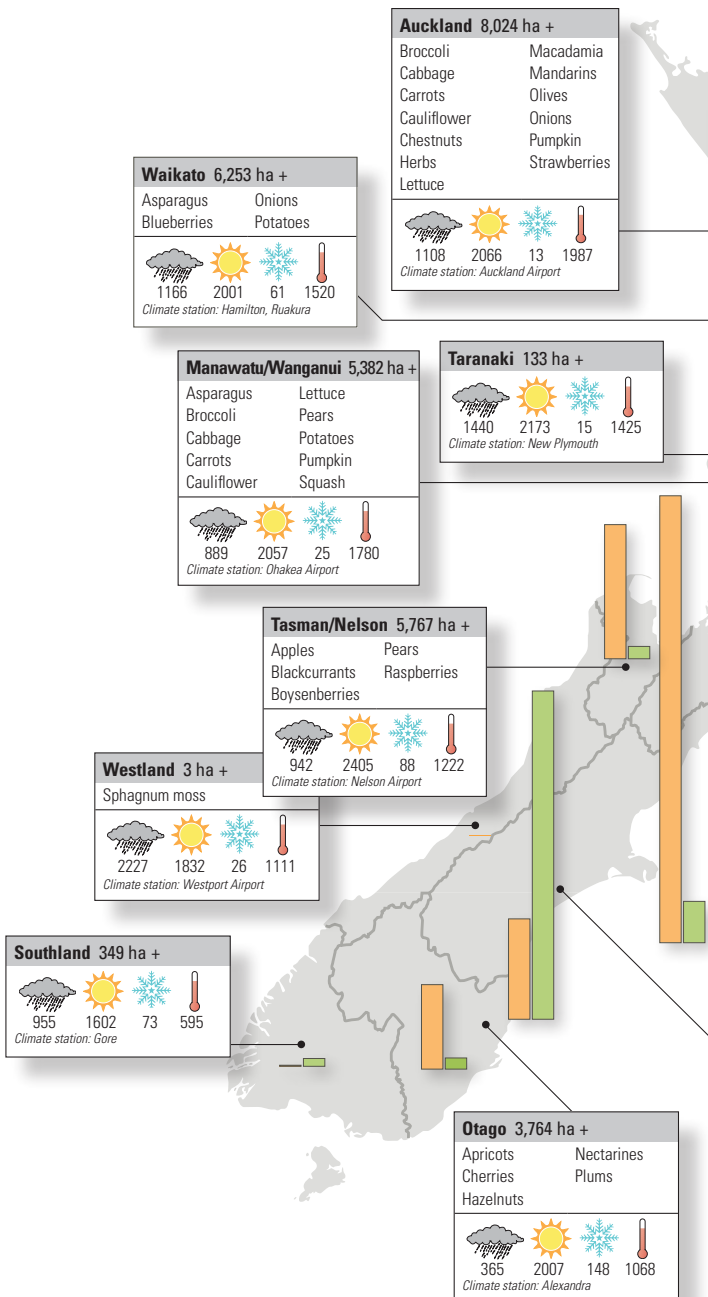
## Distribution of indoor crops (m<sup>2</sup>; 000s)

Tomatoes	Capsicum	Cucumber	Nursery crops	Flowers bulbsetc	Other indoor incrops
2007	2007	2007	2007	2007	2007
25	C	16	36	141	37+
438	364	108	163	25	150+
285	C	77	31	175+	48+
13	C	C	72	113+	32+
C	C	-	C	C	9
8	6	C	49	22+	C
C	C	C	3	29+	C
C	1	1	C	56	33+
C	C	C	C	10+	12+
72+	C	21+	C	C	19+
C	C	C	C	C	C
C	C	65	C	C	C
81	20	33	86	147+	63+
C	C	C	58	C	22+
C	C	C	C	C	C
83	C	-	140	389	431
1,005	585	266	638	1,107	856+
1,665	434	550	913	2,342	974
-66%	26%	-107%	-43%	-112%	-14%

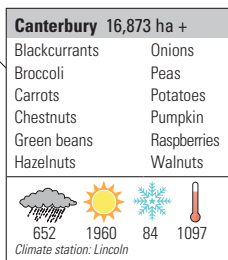
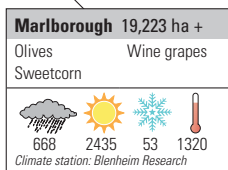
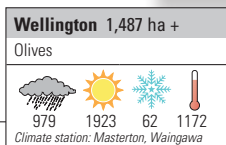
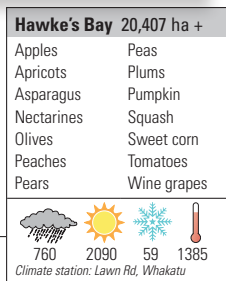
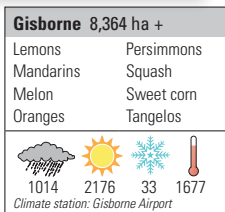
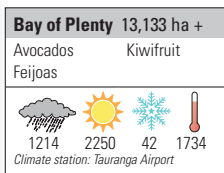
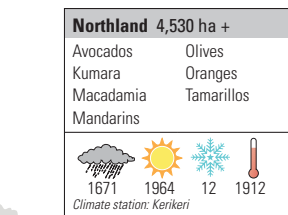
(1 ha = 10,000 m<sup>2</sup>)

# Regional resources

## Horticultural activities are distributed throughout New Zealand







## Reference

Fruit
 Vegetables  
 Regional Boundary

Crop is named where the regional area exceeds 15% of the national crop area and is more than 50 ha. Some 4,384 ha of crops could not be assigned to a specific region.

+ = incomplete data set for region

## Climate summaries

(Mean annual values for 1971-2000)



\* One degree day is accumulated when the average daily temperature is above 10.0°C for one day. Eg An average daily temperature of 15.0°C will generate 5 degree-day units.

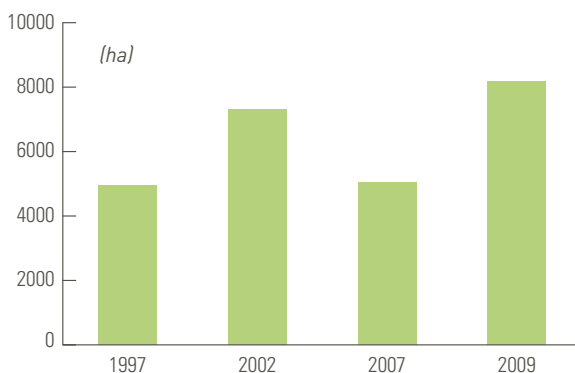
Source: Statistics NZ: Agricultural Production Survey 2005 + estimates. Climate information copyright holder and source: National Institute of Water and Atmospheric Research Ltd (NIWA).

For more information visit [www.niwascience.co.nz/ncc](http://www.niwascience.co.nz/ncc)

## ORGANIC PRODUCTION

- Organic systems production is an important section of New Zealand's horticultural production although currently a relatively small portion of total horticultural production.
- Advanced horticultural systems that strive for increasing sustainability and reduced interventions are said to be reasons why New Zealand's pipfruit industry has been moving closer to organic systems and wine producers are moving to organic and biodynamic certification as a way to enhance both product quality and sustainability. (Source: OANZ)

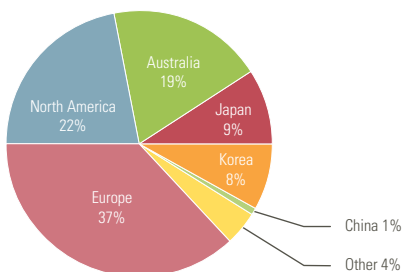
### NZ land area under certification, horticulture and cropping (hectares)



Source: OANZ/OPENZ commissioned University of Otago study

### Destination of organic exports by percentage (2009)

These figures include exports of horticulture products valued at \$85million and other exports valued at \$85m.

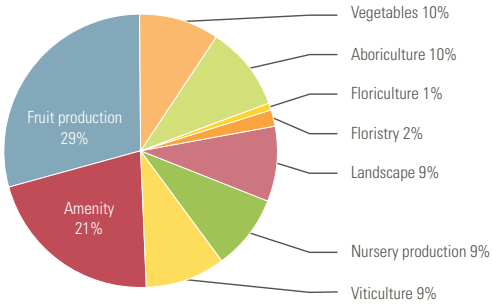


Source: OANZ/OPENZ commissioned University of Otago study

## HORTICULTURAL TRAINING

### Trainees by category (year to December 2009)

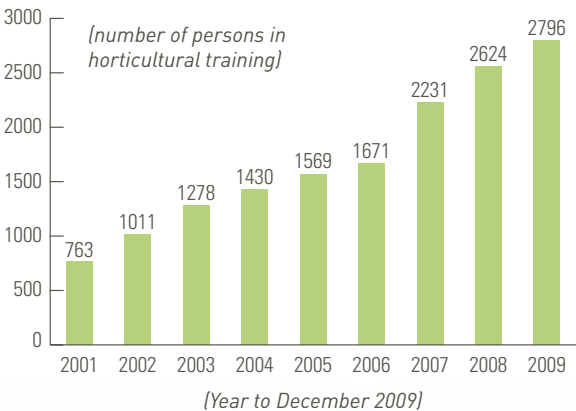
Horticultural trainees in 2009 totalled 2,796



Source: Horticultural Industry Training Organisation Inc.

For more information visit [www.hortito.org.nz](http://www.hortito.org.nz)

### Persons in horticultural training, per year, 2001 – 2009



Source: Horticulture Industry Training Organisation Inc.

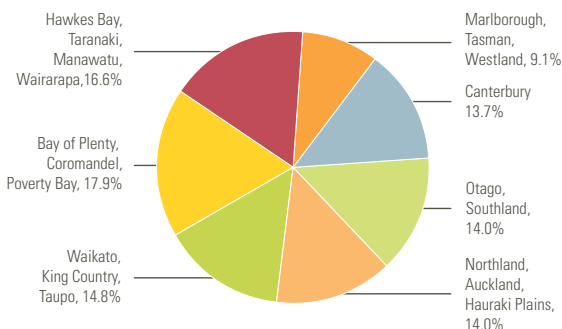


### A vital contributor to horticulture

- Bees pollinate crops and play a significant role in determining yields.
- The value of New Zealand's Honey exports increased in value by 29.4% to \$81.0m (2008: \$62.6m) with \$30.5m to UK, \$11.3m to Australia, \$8.7m to Singapore, \$7.4 m to Japan, \$5.0m to Hong Kong and less than \$5m to each of 34 other markets.
- Honey production of 12,565 tonnes was just 1.5% above 2008 production (12,375t) but 30.0% above 2007 production (9,666t) and 18.5% above the 6-year average of 10,601 tonnes.
- Domestic honey consumption is about 5,200 tonnes.
- The number of hives increased to 362,540 (2008: 344,123 hives, and 2007: 314,600 hives) with the average yield of 34.7 kg/hive for 2009, which was 4.2% above the industry's 6-year average.

Source: MAF Sector Monitoring Reports 2009 (information supplied byASUREQuality Ltd.)

### New Zealand honey crop (12,565 tonnes)



Source: MAF Sector Monitoring Reports 2009 (information supplied byASUREQuality Ltd.)

### Valuable Bees

With honey bees coming under increasing pressure from pests and diseases and the spread of varroa bee mite throughout New Zealand, it's important to consider just how valuable their role is to horticulture in New Zealand.

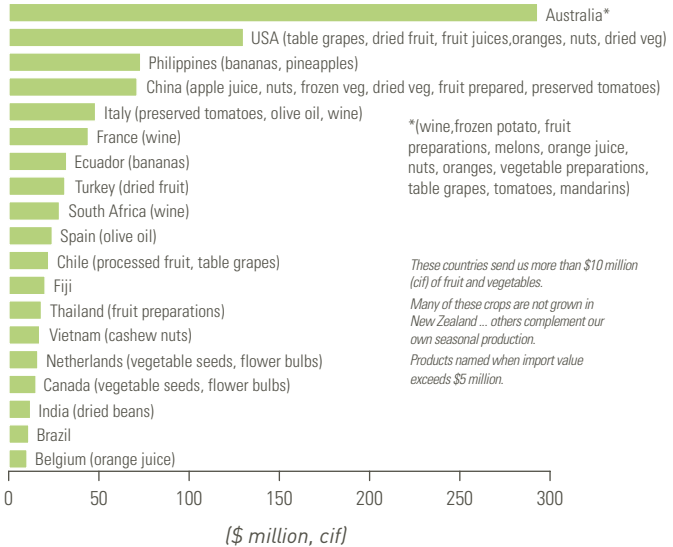
According to the New Zealand Bee Keepers Association, there are 2669 registered beekeepers in New Zealand, managing 362,540 honey bee colonies. Hobbyists (<10 hives) make up more than 70% of beekeepers in New Zealand, with 98% of bee colonies operated by semi-commercial and commercial beekeepers.

Honey is a valuable product to New Zealand's Beekeepers; \$81 million was exported and around 5,200 tonnes of it was consumed by New Zealanders in 2009. However what bees make rather pales in comparison to what they do, with bees involved in around one third of New Zealand food sources, and worth millions to the pollination industry.

Scientists are currently working on means to protect New Zealand's bees from the sorts of pests and diseases that have decimated colonies elsewhere around the world, including breeding varroa resistant bees, developing biological mitocides and monitoring the effects of chemical mite controls.

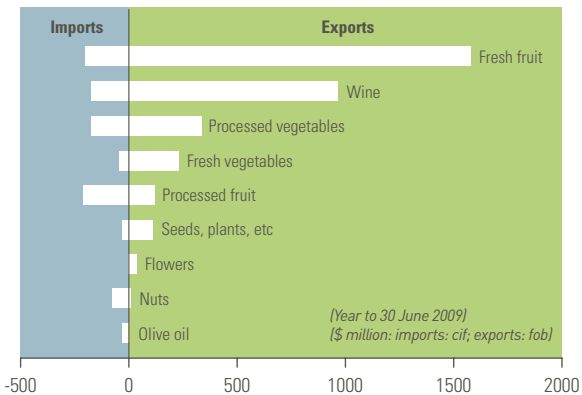


## The origin of fruit and vegetable imports, 2009 (\$ million, cif)



Source: Statistics New Zealand; Overseas Trade for year ended June 2009

## Comparisons of imports and exports 2009 (\$ million)



Source: Statistics New Zealand; Overseas Trade for year ended June 2009



## PLANT & FOOD RESEARCH

Plant & Food Research formed with a clear, united purpose: to generate knowledge and intellectual property that promotes the innovative, efficient and sustainable use of primary plant and seafood-based resources to create value for New Zealand.

Our focus is on enabling New Zealand industry to produce more and better food from less land, with reduced environmental impacts and fewer chemical, carbon and water inputs. We complement this expertise in primary production with science innovation, allowing New Zealand growers, food manufacturers and exporters to produce and successfully market fresh and processed foods according to well-defined global food trends – health, sustainability, convenience, novelty and sensory appeal.

Plant & Food Research's unique combination of research and commercial capabilities around four outcome-based platforms:

Elite genetics and new cultivars

→ Better cultivars faster.

Bioprotected production systems

→ Biosecurity, biodiversity, market access.

Sustainable production systems

→ Quality, efficiency and eco-verification.

Food Innovation

→ Discovering and delivering premium natural foods.

For more information visit [www.plantandfood.co.nz](http://www.plantandfood.co.nz)



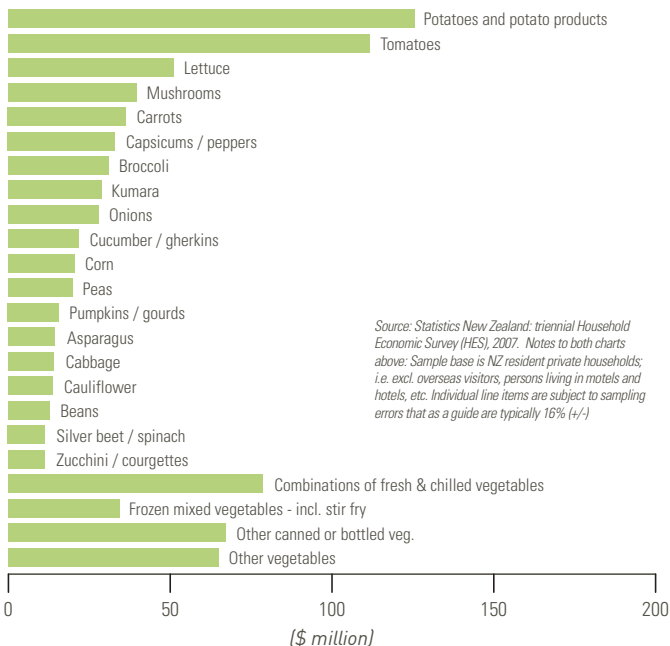
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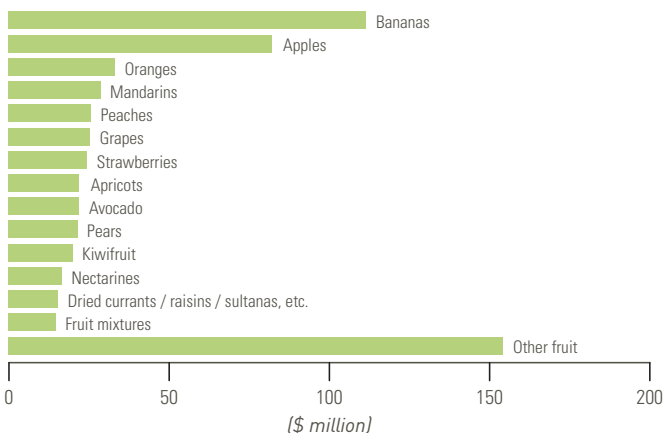
## New Zealand consumer spend on vegetables (\$ million)

(fresh / chilled / dried / canned / bottled / frozen)



## New Zealand consumer spend on fruit (\$ million)

(fresh / chilled / dried / canned / bottled / frozen)



New Zealand households spend over \$2.2 billion each year on fruit, vegetables and wine, with:

- \$510 million on fresh and chilled fruit
- \$120 million on processed fruit
- \$730 million on fresh and chilled vegetables
- \$190 million on processed vegetables
- \$670 million on wine


Source: Statistics New Zealand triennial Household Economic Survey (HES) 2007, scaled to 2009 estimated number of households.




# A mix of fruit and vegetables adds value to daily health

A balanced diet includes deeply coloured fruits and vegetables that provide the vitamins, minerals, fibre, and phytochemicals needed to maintain good health, protect against the effects of aging and reduce the risk of cancer and heart disease.


**Blue/Purple**  
*Contain phytochemicals such as anthocyanins and phenolics, which have potential antioxidant and anti-aging benefits*  
Include: Blackberries, blueberries, blackcurrants, purple grapes, plums, prunes, raisins, purple cabbage, eggplant, purple Belgian endive, purple peppers, potatoes (purple fleshed)




**Green**  
*Contain phytochemicals such as lutein and indoles, which have potential antioxidant, and health-promoting benefits*  
Include: Avocados, green apples, green grapes, honeydew, kiwifruit, green pears, artichokes, asparagus, broccoli, brussel sprouts, cabbage, beans, celery, cucumbers, endive, leafy greens, leeks, lettuce, green onions, okra, peas, green pepper, spinach, watercress, zucchini




**White/Brown**  
*Contain varying amounts of phytochemicals eg alliin, found in the onion family*  
Include: Bananas, brown pears, dates, white nectarines, white peaches, cauliflower, garlic, ginger, Jerusalem artichoke, kohlrabi, mushrooms, onions, parsnips, potatoes (white fleshed), shallots, turnips, white corn



**Orange/Yellow**  
*Contain varying amounts of antioxidants such as vitamin C as well as carotenoids and bioflavonoids, which have health promoting potential*  
Include: Yellow apples, apricots, cantaloupe, grapefruit, gold kiwifruit, lemon, mangoes, nectarines, oranges, peaches, yellow pears, persimmons, pineapples, tangerines, melon, butternut squash, carrots, yellow peppers, yellow potatoes, pumpkin, sweetcorn, sweet potatoes, yellow squash



**Red**  
*Contain phytochemicals such as lycopene and anthocyanins with potential health-promoting properties*  
Include: Red apples, cherries, cranberries, red grapes, pink/red grapefruit, red pears, raspberries, strawberries, watermelon, beets, red peppers, radishes, red onions, red potatoes, rhubarb, tomatoes



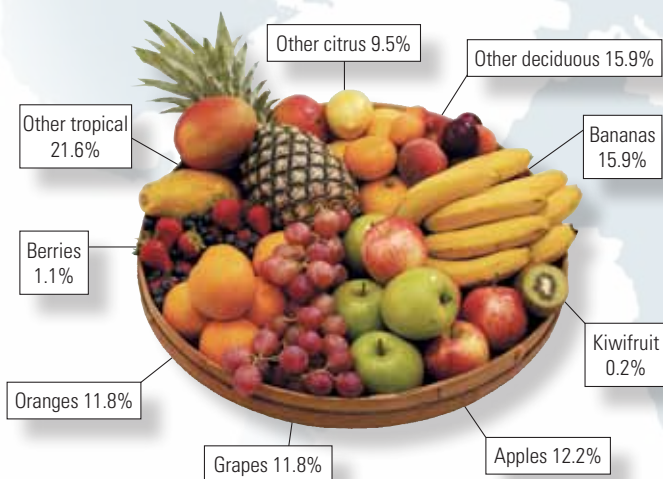


Source: [5aday.co.nz](http://5aday.co.nz)  
For more information visit [www.5aday.co.nz](http://www.5aday.co.nz)

## New Zealand's place in the global fruit and vegetable scene - 2008

Between 2006 and 2008, total global fruit production increased 4% and vegetables by 9%. According to FAO statistical data, in 2008 New Zealand was globally the largest kiwifruit producing country with 28% of global production. In green onions (not including dried), New Zealand produced 5% of global production.

### The world fruit bowl (572 million tonnes)



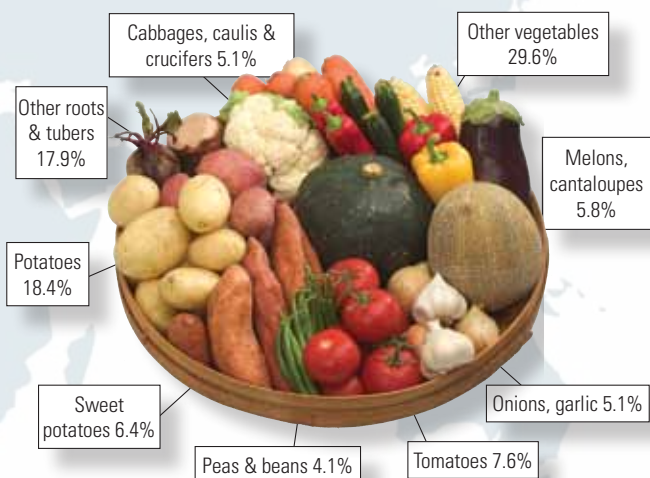
Source: FAOSTAT Agriculture Data. [www.faostat.fao.org](http://www.faostat.fao.org)

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*Overseas Trade Export statistics for year ended 30 June 2009.*  
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3. *Annual Report 2009. New Zealand Avocado Growers' Association and Avocado Industry Council Ltd.* Avocado Industry Council. [www.nzavocado.co.nz](http://www.nzavocado.co.nz)
4. *Bollard, ES Further prospects for horticulture - the continuing importance of research*  
New Zealand Fruitgrowers Charitable Trust, Wellington. 1996.
5. *MAF Sector Monitoring Reports, 2009 Ministry of Agriculture & Forestry.* PO Box 2526. Wellington. [www.maf.govt.nz](http://www.maf.govt.nz)
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No other New Zealand horticultural crops were greater than 1% of global production, but five were 0.6% to 0.5% (1/200th) of global production: apples, avocados, blueberries, green peas and hops. Importantly for New Zealand, some of those crops achieved values per tonne above the mean for the top 20 exporting countries ranked by export volumes (FAO 2007 data): kiwifruit #1, \$+30%; apples: #10, \$+38%; avocados #10, \$+88%; blueberries: #8, \$+75%.

### The world vegetable bowl (1,710 million tonnes)



Source: FAOSTAT Agriculture Data. [www.fao.org](http://www.fao.org)

7. New Zealand Winegrowers Annual Reports to 2009.  
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