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Fruit and vegetable industry in New Zealand

January 2007

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Overview

New Zealand's horticultural sector combines natural advantages with human innovation and world-leading technology to produce and export a wide variety of premium fruit and vegetable products.

The sector is a high-value, high-growth exporter, generating more than \$2.6 billion¹ of exports in the year ending June 2007. Key strengths include New Zealand's clean, green environment, diverse geography and climate, and excellent soil quality.

Geographically isolated and with stringent biosecurity regulations, New Zealand is free of many of the world's major pests and diseases. The industry is committed to ensuring fresh and processed foods are safe, farm production systems are sustainable, and the use of agrichemicals is minimised. Monitoring and traceability systems provide further quality assurance.

Fruit continues to dominate the industry's exports and the two main exports, kiwifruit and apples, are involved in a programme of continuous research and development and, more recently, innovation in marketing and branding.

Growers are continually seeking ways to further enhance the products they sell to the international market. A major area of innovation in horticulture is the continuing stream of new varieties that anticipate and meet the changing needs of consumers. New Zealand was first to the world market with products such as braeburn and royal gala apples (now

¹ This figure includes fresh fruit and vegetables, processed fruit and vegetables, flowers, seeds, plants, foliage and other products.



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grown the world over) and ZESPRI™ Gold kiwifruit. Research is also producing fruits with greater health benefits and consumer convenience, such as citrus with easily peeled rind, seedless fruit and fruit of increased size.

As well as fresh produce, New Zealand is a major exporter of processed fruit and vegetables. Leading technology, such as snap-freezing vegetables to protect them from nutrient loss and to retain flavour, gives this sector a competitive advantage.

New Zealand is pioneering the development of organic fresh and processed fruit and vegetables. Organic exports exceed \$75 million annually. The major products are kiwifruit, apples and vegetables.

New Zealand also has a small and specialised flower industry. Its strengths include the quality of flowers and bulb exports, and an ability to supply the northern hemisphere during its off season.

The industry's focus is on high quality and increasing the quantities of vibrantly coloured, well-formed new generations of existing varieties.

Fast facts

(source: www.hortresearch.co.nz/files/aboutus/factsandfigs/ff2007.pdf unless stated otherwise. Statistics are for the year ending 30 June 2007, and amounts are expressed in New Zealand dollars unless stated otherwise.)

- The horticultural sector is one of New Zealand's fastest growing export sectors – exports have grown from about \$115 million in 1980 to \$2.6 billion in 2007.
- Horticultural exports have increased to 8 percent of total merchandise exports from New Zealand in 2007.
- Fruit, vegetables and flowers were exported to 121 countries around the globe in 2007, an increase from 114 in 2000.
- Exports to 46 countries exceeded \$1 million in 2007, up from 42 countries in 2000.
- Vegetable exports including fresh vegetables (\$260m) and processed vegetables (\$306m), went to 76 countries.
- Kiwifruit exports were valued at \$765 million in 2007, representing 29 percent of New Zealand horticultural exports, followed by wine (26 percent), apples (13 percent), processed/frozen vegetables (10 percent) and fresh vegetables (10 percent).
- Onions (\$120.5 million) and squash/Kabocha (\$66 million) dominate fresh vegetable exports.
- Japan is the major market for fresh vegetables exports, while Australia is the main market for processed vegetables.
- Fresh apples valued at \$343 million were exported to 61 countries. Exports of apple preparations and juice were \$31 million.



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- Honey exports exceeded \$47 million in 2006. The United Kingdom is the largest market, importing \$21 million worth, then Australia and Singapore which import approximately \$6 million each, then Japan and Hong Kong which import \$3 million each.
- Under New Zealand growing conditions, asparagus can grow eight inches (20 cm) in 24 hours!
- Over 400 international studies have shown kiwifruit to be an unusually rich source of vitamins, minerals, dietary fibre and phytochemicals. Scientific studies in the United States show that, weight for weight, kiwifruit is the most nutritious of all commonly eaten fruits – high in vitamin C, potassium, magnesium, dietary fibre and anti-oxidants, and low in calories, sodium and fat. It is also a good source of folic acid and vitamin E. (*source: NZTE research*).

Statistics

Horticultural exports have grown from \$115 million in 1980 to \$2.6 billion in 2007. The key export markets for New Zealand fruit and vegetables are Japan, the United States, United Kingdom, European Union and Australia.

To access further information, including a breakdown of horticultural exports by species, export market destinations, and graphs of varieties by growing regions around New Zealand, please see HortResearch's website for *FreshFacts*:

www.hortresearch.co.nz/files/aboutus/factsandfigs/ff2007.pdf

New Zealand's horticultural products are increasingly available year-round due to international partnerships and technologies. For information about vegetables, see www.vegetables.co.nz.

It is estimated that over 44,000 people are employed in the New Zealand horticulture industry, with thousands of additional seasonal workers.

Food safety

New Zealand is internationally recognised for producing safe, high quality food. It is free from many of the world's major pests and diseases. Stringent biosecurity regulations are designed to keep the environment pristine and provide ongoing protection for its food safety status.

New Zealand has sophisticated food certification and tracking systems in place – from source to consumer – and there is significant investment in research and development for continuous improvement of these systems. New Zealand also has some of the world's most rigorous agrichemical registration and management regulations.

A range of agencies co-operate to maintain New Zealand's world-leading reputation for food safety, including:



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Biosecurity New Zealand

www.biosecurity.govt.nz

Biosecurity New Zealand is the lead agency for ensuring unwanted pests and diseases are kept out of New Zealand.

ERMA New Zealand

www.erna.govt.nz

ERMA regulates the introduction of new species of plants and animals.

New Zealand Food and Safety Authority

www.nzfsa.co.nz

The New Zealand Food and Safety Authority protects public health and facilitates access to markets for New Zealand food products.

Customs

www.customs.govt.nz

Customs is the key border protection agency that monitors all goods and people entering and leaving New Zealand.

Sustainability

Environmental sustainability is a key focus for the New Zealand's horticulture industry. A range of programmes are successfully combining economic criteria, such as improved yield and quality, with environmentally friendly and sustainable production practices.

PipSure is the apple and pear industry's integrated fruit production programme under which growers monitor pests and beneficial organisms and use biological controls to sustainably produce top quality fruit. A new programme being introduced in 2007 will take that to the next level, with the goal of producing apples and pears that return no detectable chemical residues.

Where there is no alternative to agrichemicals, environmentally benign 'soft' products are applied, and fruit is tested to ensure any residues are less than 10 percent of internationally set standards. All New Zealand Pipfruit growers are registered under the Pipsure programme, except for the 10 percent who grow organically.

New Zealand GAP

www.newzealandgap.co.nz

New Zealand GAP (Good Agricultural Practice) is a quality assurance programme that provides a traceable and accountable system, from crop to customer, for the production of fruit, vegetables and flowers. The programme is benchmarked against international quality assurance programmes. By meeting the standards required by the programme, suppliers demonstrate that their products are of high quality, produced in a sustainable manner and meet stringent food safety standards.



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Organics

New Zealand's fertile soils, clean water and outstanding animal and plant health status make it an ideal place to grow organically. Rapid growth in the production of certified organic fruit and vegetables is meeting international demand for safe, nutritious organic foods.

The industry body Organics Aotearoa New Zealand (OANZ, www.oanz.org.nz) has set a target of growing the sector to \$1 billion by 2013, with horticultural products poised to be a key component of increased production.

Around 5 percent of New Zealand's exported kiwifruit and pipfruit is organic, with fruit accounting for more than 70 percent.

Organic vegetables including peas, sweet corn, carrots, potatoes and onions are also high earning exports.

Production of organic avocados, citrus fruit, berry fruits, stone fruit and feijoas is also steadily increasing.

New Zealand has three internationally recognised organic certification agencies:

- BioGro, www.bio-gro.co.nz
- AssureQuality, www.agriquality.com
- The Biodynamic Farming Association, www.biodynamic.org.nz

The Biodynamic Farming Association offers certification to the Demeter standard. OANZ runs an Organics Advisory Programme, which assists producers to make the transition to organic production.

Industry structure

Horticultural enterprises operate at many scales, with off-orchard pack houses allowing many small businesses to be economic. Major players include Heinz-Watties, ZESPRI™ International, ENZA, Delica, Cedenco and Freshco.

Until the late 1990s, the marketing and export of apples and pears was controlled by the centralised New Zealand Apple and Pear Marketing Board. In 2000, as a result of the Apple and Pear Restructuring Act 1999, the board became ENZA Ltd – a private, grower-owned company – before merging with Turners and Growers in 2002.

In late 2001, the pipfruit industry was deregulated, opening up pipfruit exports to other New Zealand companies. Pipfruit New Zealand Inc. works with growers, helping them to be the best pipfruit producers in the world and to be internationally competitive.



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Since 1999, ZESPRI™ International has been the sole exporter and overseas marketer of kiwifruit outside Australia.

The major research institutes working in the horticulture field are HortResearch (www.hortresearch.co.nz) and Crop and Food Research (www.cropandfood.co.nz).

Since 2005, the main industry group has been Horticulture New Zealand (www.hortnz.co.nz), which represents 7,000 fruit and vegetable growers. Horticulture New Zealand combines the resources and expertise of the former New Zealand Vegetable and Potato Growers, New Zealand Fruitgrowers and New Zealand Berryfruit Growers.

The New Zealand Horticulture Export Authority (HEA, www.hea.co.nz) is a legislative authority that enables product groups to focus on exporting good quality, safe fruit and vegetables. The HEA also works with government to improve market access. All exporters of HEA products must hold an export licence or an exemption to ensure that exported product meets the requirements of the product groups' export marketing strategy. For the HEA product groups and other industry organisations see the contacts list at the end of this document.

Flower industry

New Zealand's climate, clean air, water and intensity of light combine to create excellent conditions for the production of high quality flowers. Other strengths include skilled and innovative growers, sophisticated technologies, and scientific research and development along with entrepreneurial marketing. Exports include cut flowers and unique, native greens and foliage, bulbs, as well as flower, fruit and vegetable seeds.

The export industry developed in the 1970s with the advent of regular direct air links to key markets such as Japan, the United States and Europe. This was coupled with recognition that New Zealand had the skilled grower base and climatic conditions to successfully compete in the international market.

The cymbidium orchid has been the number one crop for some years, but commercial industries have also developed in calla lilies, sandersonia, nerines, lilies and paeonies.

New Zealand growers have been particularly adept at taking exotic species, such as calla lilies, adapting them to local conditions and developing improved varieties of colour, size and shape.

Bulb and seed production increased nearly four-fold in the last decade with New Zealand exports now found in over 40 countries and earning NZ\$71.4 million in 2007. Japan, the Netherlands and the United States are key buyers of bulbs, using New Zealand exports to fill the market gap in northern hemisphere production for early and late season supply.



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Growth in seed production reflects New Zealand's strengths in effective crop pollination and high quality production and harvesting systems.

The industry is well served by sophisticated packaging and transport companies and regular airfreight routes to key overseas markets.

Exports of cut flowers and foliage earned NZ\$42.8 million in 2007 with orchids, zantedeschia (calla lilies), flowers, tubers and liliium bulbs in strong demand.

Regional strengths

Horticulture activities are distributed throughout New Zealand, with a number of regions specialising in the production of particular crops.

The Bay of Plenty is home to much of New Zealand's kiwifruit production, with the region's fertile soils and a mild climate year-round creating excellent growing conditions.

The Hawkes Bay's temperate climate favours production of pipfruit, stone fruit, wine grapes and a wide variety of speciality horticultural crops, while high sunshine hours in neighbouring Gisborne are ideal for growing citrus fruit, squash, broccoli and sweet corn.

The Nelson region is an important centre for berries and blackcurrants while Marlborough is internationally renowned for its grapes, particularly sauvignon blanc.

The main areas of production are:

Hawkes Bay	19,176 ha
Canterbury	16,479 ha
Bay of Plenty	11,739 ha
Marlborough	10,368 ha
Greater Auckland	8,000 ha
Gisborne	7,795 ha
Tasman/Nelson	5,872 ha
Northland	4,279 ha
Otago	4,095 ha

Regional clusters and cooperatives, including representatives from the horticultural sector, are varied. They include Food Hawkes Bay (www.foodhawkesbay.co.nz) a group that initially received support from government through the Major Regional Initiatives programme and has recently amalgamated with the Hawkes Bay Food Group to create one industry body for the region.

The Tairāwhiti (Gisborne) Major Regional Initiative, another partnership involving government through the Major Regional Initiative programme,



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involves food procurers and processing businesses in the Tairāwhiti region developing underutilised land and increasing exports.

Other industry groups include Food Bay of Plenty (www.foodbop.org.nz) a cluster of food manufacturing and processing businesses in the greater Tauranga area.

Innovation and invention

New Zealand's horticulture sector demonstrates many examples of innovation and invention, with the total investment in horticulture exceeding \$38 billion.

- New Zealand was first to the global market with ZESPRI™ GOLD, the new, sweeter kiwifruit variety.
- In the past 20 years, an estimated \$20 million of industry and government money has been spent on pipfruit breeding in New Zealand, which produced new apples such as Pacific Rose™ (Sciros) and Jazz™ (Scifresh).
- New Zealand scientists are working to pack bigger health benefits into apples by aiming to be the first to grow apples with red, gold and green flesh. The compounds that provide the colour in apples, known as anthocyanins, have a very high antioxidant activity.
- New Zealand also pioneered the production of avocado oil through developing technology to stabilise the oil. Avocado oil's distinguishing features are a high smoke point, making it suitable for quick searing of food, and 75 percent mono-unsaturated cholesterol-reducing properties.
- Integrated pest management is a major thrust of on-farm research with a huge effort going into reducing chemical inputs across a range of horticultural product groups.
- HortResearch is developing new commercial varieties of baby kiwifruit the size of a large cherry. The fruit has a super-sweet flavour and can be eaten whole like a grape.
- HortResearch is also leading the development of black currants for the international market. Plumper, sweeter fruit with an extended harvest season and a higher than ever vitamin C content have been developed.
- Compac Sorting Equipment Ltd is supplying high performing sorting technology and equipment for the international horticultural industry. Following on from the success of its Compac InVision 9000 blemish grading technology in the United States citrus market, Compac is now delivering the accuracy and performance of the system to apples and other fruit types.
- A clever label that changes colour to indicate the ripeness of fruit has recently been launched by Ripesense Limited. ripeSense®, a new, innovative 'intelligent sensor label' is world-first technology, offering advantages for consumers and retailers. Originally invented by HortResearch scientists, the sensor label reacts to the gases given off by the fruit as they ripen, changing from red (unripe)



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through to yellow (ripe). After the successful test marketing in New Zealand and northwest United States, ripeSense® is now being sold in Australasia, the United States and Europe.

- Innovative technology that delivers high quality, fresh cut produce fruit and vegetables with extended shelf-life is also being marketed in Australasia, Europe and the United States by Fresh Appeal Limited. The technology is being applied to fruits and vegetables such as apples, mandarins, oranges, pears, carrots, onions and potatoes. The unique, preservative-free process is a simple and effective means of washing fresh cut produce and at the same time using ultraviolet light to kill any potential contaminants. The produce retains its fresh look, texture and flavour with significantly increased shelf life.
- New Zealand company Vital Foods has launched the world's first Omega 3 and 6 medication made from fruit. The new supplements, produced after years of developing the technology in Auckland, are derived from kiwifruit seeds and have been launched in the European market as part of a joint venture in Germany.
- Other innovative companies are also producing a wide variety of specialty foods derived from horticultural products, including oils, spreads, jams and unique New Zealand fruit pates and pastes.

Case studies

ZESPRI™

Website: www.zespri.com

Delica (New Zealand) Limited

Website: www.delica.co.nz

New Zealand Berryfruit Group

Website: www.blackcurrants.co.jp

Avocado Oil New Zealand

Website: www.avocadooil-nz.com

Cedenco Foods

Website: www.cedenco.com

International quotes

"The integrity of flavour is incomparable – it's almost as if New Zealand products have absorbed the beauty of where they're from."

Tom Valenti, Chef/Owner, Quest Restaurant, New York

"...the people of New Zealand are the luckiest people on the planet. No one lives more than one hundred miles from a vineyard and daily everybody gets to eat delicious, safe, tasty food from gardens, farms and the sea close to their homes."



Lauraine Jacobs, Food Editor of New Zealand's *Cuisine* magazine

"You can just look at the water and rich, green land, and know things are pure."

Shawn McClain, Chef/owner, Spring Restaurant, Chicago

Contacts

Industry Groups

Avocado Industry Council

Website: www.nzavocado.co.nz

Email: jinfor@nzavocado.co.nz

Blackcurrants New Zealand Ltd

Website: www.blackcurrant.co.nz

Email: blackcurrants@itm.org.nz

Horticulture New Zealand

Website: www.hortnz.co.nz and www.vegetables.co.nz

Email: info@hortnz.co.nz

New Zealand Asparagus Council Incorporated

Email: information@vegfed.co.nz

New Zealand Boysenberry Council Ltd

Email: boysenberry@itm.org.nz

New Zealand Chestnut Council

Website: www.nzcc.org.nz

Email info@nzcc.org.nz

New Zealand Flower Exporters Association

Website: www.nzflowers.com

Email: flowers@bluepacificevents.com

New Zealand Buttercup Squash Council

Website: www.nzbsc.com

Email: nzbsc@nzbsc.org.nz

New Zealand Nashi Asian Pear Product Group

email: ian@itm.org.nz

New Zealand Tamarillo Growers Association

Website: www.tamarillo.com

New Zealand Truffles Association

Email: gareth@renowden.co.nz



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Organic Products Exporters of New Zealand

Website: www.oanz.org.nz/openz/

Email: info@organicsnewzealand.org.nz

Organics Aotearoa New Zealand

Website: www.oanz.org.nz

Persimmon Industry Council

Website: www.nzpersimmons.org.nz

Email: persimmons@itm.org.nz

Pipfruit New Zealand Incorporated

Website: www.pipfruitnz.co.nz

Email: info@pipfruitnz.co.nz

Summerfruit New Zealand (peaches, nectarines, cherries, apricots and plums)

Website: www.summerfruitnz.co.nz

Email: info@summerfruitnz.co.nz

Table Grapes Export Council

Email: grapes@itm.org.nz

Companies

Cedenco

Website: www.cedenco.co.nz

Email: nzinfo@cedenco.com

Compac Sorting Equipment

Website: www.compacsort.com

Email: katen@compacsort.com

Delica

Website: www.delica.co.nz

Email: info@delica.co.nz

ENZA (International)

Website: www.enza.co.nz

Email: info@enza.co.nz

Fresh Appeal

Website: www.fresh-appeal.com

Email: flemming@fresh-appeal.com

Freshco

Website: www.freshco.co.nz

Email enquiries@freshco.co.nz



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Heinz-Watties

Website: www.heinz.com.au

Ripesense Limited

Website: www.ripesense.com

Email ripesense@ripesense.com

ZESPRI™

Website: www.zespri.com

Certification, quality assurance, research and other contacts

AgriQuality

Website: www.agriquality.co.nz

Email: info@agriquality.com

Crop and Food Research

Website: www.crop.cri.nz

Crop and Food Research provides growers and exporters with the technology to produce high quality products for both international and local consumption.

GROWSAFE

Website: www.growsafe.co.nz

Email: info@growsafe.co.nz

HortResearch

Website: www.hortresearch.co.nz

Since its inception ten years ago, HortResearch has developed new cultivars, new production methods that reduce pesticide use, intensive growing methods, postharvest management systems and new technologies.

Hortsource

Website: www.hortsource.co.nz

New Zealand Food Safety Authority

Website: www.nzfsa.co.nz

Email: nzfsa.info@nzfsa.govt.nz

New Zealand Horticultural Export Authority

Website: www.hea.co.nz

The Agrichain Centre Limited

Website: www.agrichain-centre.com