



Horticulture Monitoring Report

A short-term financial and physical forecast reflecting farmer, farm consultant and industry perceptions of farming trends and issues, production and financial figures

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Free copies are available on MAF's website at <http://www.maf.govt.nz>

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All information for the model and commentary-only reports has been contracted in by MAF.

Foreword

Monitoring is a process whereby MAF Policy monitors the production and financial status of farms and orchards in terms of their cash income and expenditure. Trends, issues, and sector concerns are also monitored.

The report reflects growers' expectations and intentions, and the thoughts of those servicing the sector. They are not MAF price or production predictions.

The model orchards depicted in this report are representative of their orchard type within the region. They are based on the average orchard, in a statistical sense, for the regions. However, they have been adjusted to represent real orchards.

From time to time the models are revised. This results in some changes, and caution should be taken in comparing between years.

Information for each model is drawn from 20 orchardists, and discussions with a wide cross-section of agribusinesses.

The aim of each model is to best typify an average orchard for the region. Budget figures are therefore indicative of the average levels of income and expenditure, management, orchard production, debt and expenditure on development and capital purchases. Drawings are averaged from the contributing orchards, as are off-orchard income, new borrowing, other cash income and lease costs.

Monitoring is being constantly improved to better accommodate the needs of the users of the reports.

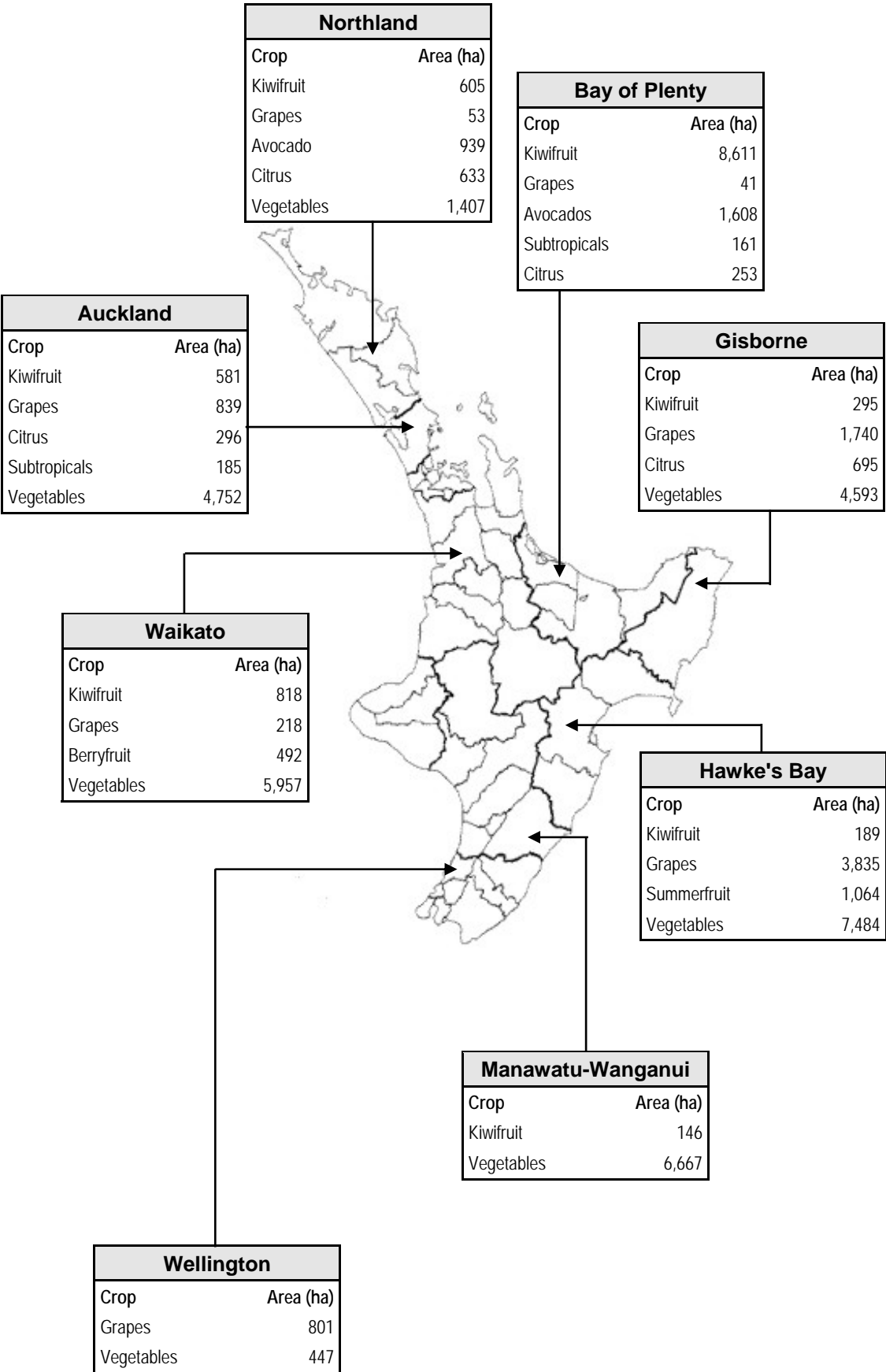
The Economic Orchard Surplus (EOS) depicted in the model budgets is calculated as follows:

Gross Orchard Revenue + Change in Value of Stock on Hand - Working Expenses (excluding interest, rent and lease costs) - Depreciation - Wages of Management.

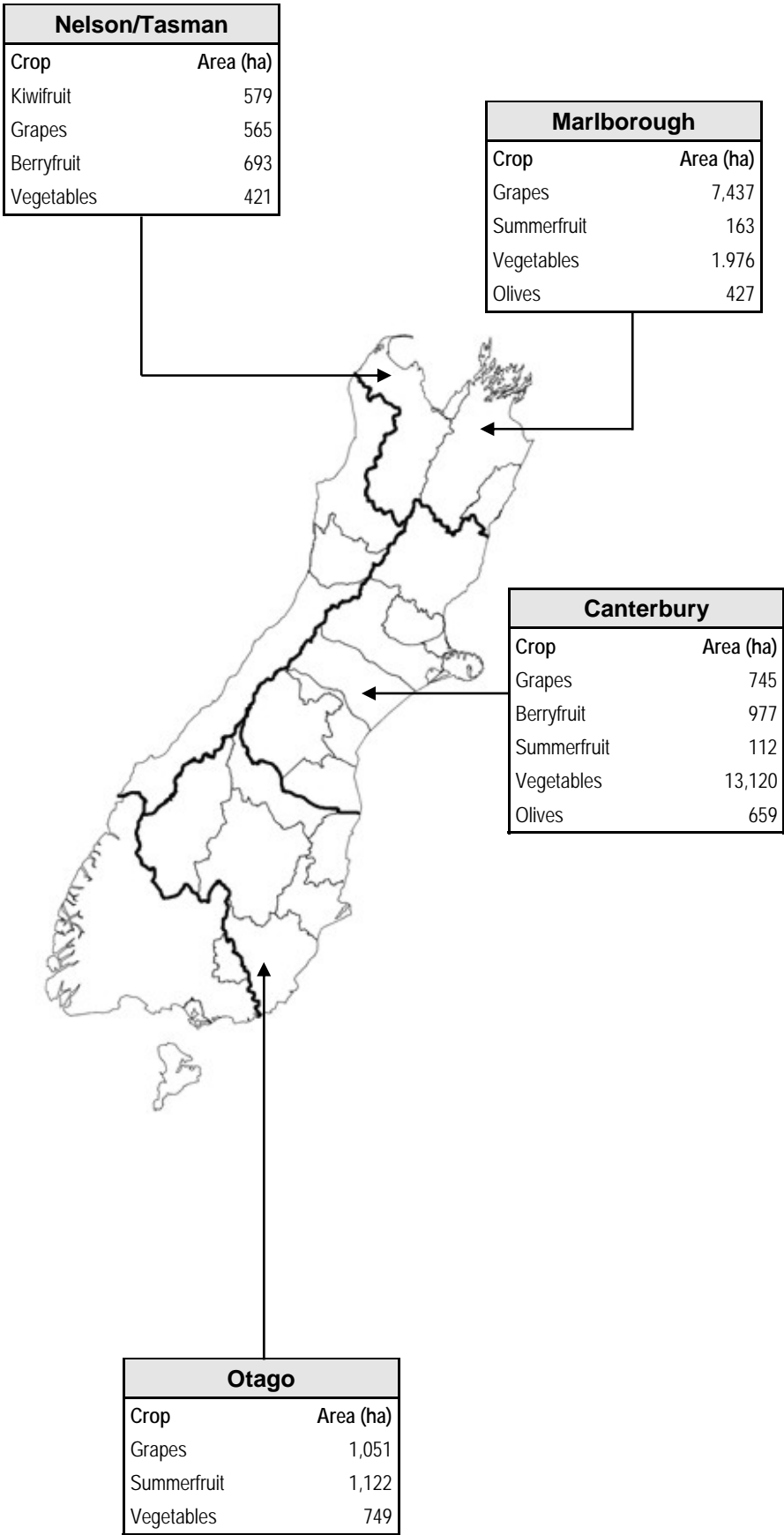
Wages of Management (WoM) are calculated as follows:

\$31,000 allowance for labour input + 1% of total capital as managerial reward. An upper limit for WoM of \$75,000 has been set.

2002 Horticulture Statistics - Main Crops



2002 Horticulture Statistics - Main Crops



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Sector Overview

Overall the horticulture sector has had a difficult year in 2004/05, with incomes generally falling, and the sector's confidence shaken. Low export prices as a result of high exchange rates, increasing costs of production, and increasing volumes of competitors' products in major markets are recurrent themes in this report. Unlike the key agricultural products, horticultural crops have not been buffered from the effects of the exchange rate by high international commodity prices. For key horticultural crops, international prices have fallen in the past year. However, the horticulture sector has successfully weathered periods of high exchange rates in the past. Horticultural export earnings surged upwards after the last period of high exchange rates in 1996/97, and can be expected to do so again.

Climatically, the cool spring and early summer delayed maturity and, in most crops, reduced yields. A warm, settled mid to late summer and autumn partly compensated for the cool start to the season. While there were no widespread adverse climatic events, hail damaged crops in the Auckland, Canterbury and Hawke's Bay regions, and wet weather in late May disrupted the end of the kiwifruit harvest.

Many growers of export crops have experienced low prices in 2004/05, mainly as a result of the high exchange rate. Freight rates have also significantly increased. Increased volumes of some horticultural products in key export markets resulted in downward pressure on prices, with the report noting, for example, that "the world is awash with onions". Growers of some crops preferred to switch to the local market. New Zealand's competitive edge is being eroded by new competitors in some cases. For example, Eastern European blackcurrant growers are reportedly selling blackcurrants at "below cost", and South American and African growers are an increasingly serious threat to New Zealand's flower exporters.

Record volumes of kiwifruit were produced in 2004, but grower prices fell by 30% on the previous year. The cash orchard surplus for 2004/05 fell by 70%. The 2005 crop is similar in volume terms, and growers' expectations are for a small price drop due to exchange rate factors. Fruit taste incentives have been increased significantly for the 2005 crop, and the industry is still learning how to optimise management to achieve improved taste.

Winegrape volumes fell in 2005 due to the cold December. Prices also fell by 5-15%, and the cash vineyard surplus in 2005 is expected to fall by 60% in the Hawke's Bay model, and 30% in the Marlborough model. In 2006, growers are expecting cash orchard surpluses to recover due to higher yields and (in Hawke's Bay) higher prices. Winegrape growers are focused on quality and have redeveloped areas of their vineyards to better paying varieties.

The gross margin for onions in 2004/05 is estimated to have been negative, after several years of poor returns.

The season to date has suited the avocado crop, and production is expected to increase by 85% in 2005/06 as a result of both increased yields and a larger bearing area.

Serious and disruptive labour shortages, particularly for harvesting, grading and packing, are reported across the horticultural sectors. Wage rates are increasing and the industry is working with relevant government agencies to improve the supply of labour and employment practices. The horticultural sector has been particularly hard hit by the 2004 amendments to the Holidays Act, with peak labour demand falling in the period when most public holidays occur (Christmas to Easter).

Growers are frustrated at the difficulty of obtaining access to new plant material from overseas. The 2005 Budget announcement of funding for diagnostic services for plant post-entry quarantine has been welcomed. However, concerns remain over the review of plant import health standards for some horticultural crops, and the difficulty and costs associated with bringing in new species of plants under the Hazardous Substances and New Organisms Act.

Falling world honey prices and increasing costs associated with varroa monitoring and treatment are resulting in a decline in profitability and hive numbers in the beekeeping sector. If this trend continues, the availability of hives for pollination of horticultural crops may be affected, and pollination costs will continue to increase.

On a positive note, a range of research programmes are running for the horticultural sector, including research into the health benefits of berry crops, improved pest and disease management, and improved taste. Growers continue to adopt environmentally friendly management practices and to become accredited to market assurance programmes such as the Assured Supplier programme. The formation of the combined industry body, Horticulture New Zealand, has provided a united voice for the fruit and vegetable sectors.

Kiwifruit

Model Description

This report covers kiwifruit orchards in the major growing areas of New Zealand. The model budget represents an established owner-operator property in the Bay of Plenty, an area that produces around 80% of the New Zealand kiwifruit crop.

The text reflects all kiwifruit-growing districts with a brief specific comment for each. Financial data relates to the year ended 31 March.

Kiwifruit income spans two financial years with the residual payment for each crop occurring in the following financial year. For example, final payments on the crop harvested in May 2004 occur in the 2005/06 year.

Table 1: The Model in Summary 2004/05

Effective area (ha)	2001/02	2002/03	2003/04	2004/05	2005/06f
Existing Hayward (ZESPRI™ GREEN)	4.5	4.5	4.5	4.5	4.5
New variety (ZESPRI™ GOLD)*	0.5	0.5	0.5	0.5	0.5
Total	5.0	5.0	5.0	5.0	5.0

* Existing vines converted to new variety in July 1998. First production occurred in May 2000.

Table 2: Key Parameters

	2001/02	2002/03	2003/04	2004/05	2005/06f
ZESPRI™ GREEN:					
Production (export trays/ha)	7,100	6,080	6,400	7,385	7,000
Total production (export trays)	31,950	27,360	28,800	33,233	31,500
Total revenue (OGR \$/tray)*	4.51	5.65	6.35	4.32	4.25
Revenue before 31 March (\$/tray)	4.24	5.25	6.00	3.85	3.85
Revenue after 31 March (\$/tray)	0.27	0.40	0.35	0.47	0.40
Production (export trays/ha)	7,900	7,200	7,500	9,800	8,900
Total production (export trays)	3,950	3,600	3,750	4,900	4,450
Total revenue (OGR \$/tray)*	4.96	6.59	7.25	5.50	5.00
Revenue before 31 March (\$/tray)	4.76	6.06	6.86	4.93	4.60
Revenue after 31 March (\$/tray)	0.20	0.53	0.39	0.57	0.40
Gross orchard revenue (\$)	178,610	186,926	223,525	171,028	166,658
Cash orchard surplus (\$)	78,505	70,367	95,955	29,688	33,078
Net Trading profit (\$)	70,005	62,367	88,205	17,568	21,478

Key Points

- The total 2004 crop volume was a record at around 80 million trays. While the fruit achieved good prices in international markets, grower revenue/tray reduced around 30%, mainly due to the exchange rate effect.
- Gross revenue was down 23%, spending up 10% and cash orchard surplus down 70% for the model orchard in 2004/05 compared with the 2003/04 year.
- In 2005/06, growers expect similar volumes and revenue/tray to 2004/05 and are intending lower spending, having brought orchards up to date in maintenance and equipment over recent years.
- Incentives paid to growers for fruit taste will increase significantly for the 2005 crop.

- Late fruit maturity, particularly of the main green variety of kiwifruit, has extended the 2005 harvest well into June.
- Industry organisations support the industry operating model of co-operative integrated supply through a single point of market entry, and a formal endorsement will be sought at the ZESPRI Annual General Meeting in July 2005.

Physical Factors

Northland

Kiwifruit growers in Northland have had another reasonable growing season. Fruit is grown mainly around Whangarei and Kerikeri. About one-third of the producing area of Northland kiwifruit is ZESPRI™ GOLD, which requires less winter chilling so is a good option for the warmer northern climate. The growing season has provided few problems. Autumn has included some dry periods which have contributed to smaller fruit size. Fruit maturity has been early enough to enable a good proportion of Northland fruit to be harvested under maturity criteria for the early start programme.

A focus on achieving high dry matter has meant growers have been fine-tuning their orchard work, but regional average dry matter results are not yet compiled. Growers targeted smaller fruit size for the gold variety, in line with market requests. Size of the green fruit is tending to be smaller than the national average, probably due to the cool December temperatures, dry autumn and early harvest. However, lower reject rates mean yields are likely to be similar to the good yields of 2004.

Fruit from a few ZESPRI™ GOLD orchards around Kerikeri have shown a hollow in the core and browning of the flesh around the fruit core, identified during pre-harvest checks. These orchards have required extra fruit sampling to work out how extensive the disorder is, which has had some impact on the harvest strategy. The cause is not known, although one theory is that cold temperatures before flowering have a role. This fruit core disorder has also been picked up in routine pre-harvest fruit sampling in ZESPRI™ GOLD from other areas.

As has occurred in other districts, gold variety fruit has had some physical damage showing up in coolstore a few weeks after harvest, which has meant some packed fruit needed re-packing to remove the affected fruit.

Auckland

Auckland has had a disappointing growing season for their 2005 kiwifruit. Widespread hail in December affected orchards throughout the district, especially those growing ZESPRI™ GOLD. Although insurance covers some fruit loss to hail, damage to the leaf canopy is not compensated and causes reduced productivity, smaller fruit size and water stain marks on fruit. Management costs increase after hail due to thinning off badly marked fruit.

Warm autumn conditions have aided fruit growth and irrigation was widely used to support vines during dry periods in summer. Fruit size is likely to be close to industry average. Indications are that fruit dry matter, a measure of taste and a key quality focus, is tracking well in the Auckland region.

Fruit maturity has been late, with wet weather arriving once the fruit was mature, making access to orchards for harvesting difficult. Harvest is still continuing, but yields are likely to be below the very good 2004 results by about 10% for green orchards and more for gold orchards, particularly where they suffered hail damage.

Bay of Plenty

The growing season to produce the 2005 crop began with good winter chilling. Bud break was about 10 days later than usual. Good numbers of shoots and flowers were produced on the green vines. There were fewer flowers than last year on gold vines, but still an adequate number. Few spring frosts occurred and regular rain was beneficial through spring. Conditions were cool and windy from

November to January which slowed vine growth and fruit development, and increased blemish on fruit (especially north of Tauranga). Rainfall was low between early January and late March. April was very dry, which helped orderly harvest of the early fruit. Autumn temperatures were mild, which delayed fruit maturity, but aided fruit size. Many orchards were not meeting maturity indices until mid-May, two to three weeks later than usual. Very heavy rain around Tauranga in mid-late May delayed harvesting, but few kiwifruit orchards were flooded. The low-lying orchards prone to flooding had already been picked by mid-May because they are also the most frost-prone. The heaviest rain was not concentrated in the main kiwifruit growing areas.

At the time of writing at the end of May, a considerable amount of green kiwifruit is still to be picked, but most of the gold variety has been harvested. Green fruit maturity coincided with an extended period of wet and showery weather, which has delayed picking. Fruit must be dry at picking. Growers and packers are nervous about further wet weather forecasts as there are significant volumes of fruit, especially green kiwifruit, to pick in June. Usually harvest extends to the first week or so of June, but this season, picking is likely to continue until late June. Fruit holds well on the vines, but growers become concerned about increasing rejects due to winter storms and the risk of frost damaging fruit.

At the time of writing, harvest is not complete but growers expect yields a little below last year's record crops for both green and gold varieties. Fruit size is tracking close to market requirements. Average dry matter is not yet available, but more fruit is being segregated on the basis of dry matter, which will help to meet market requirements. The forecast yield used in the model budget is 7,000 trays/hectare (ha) of green fruit and 8,900 trays/ha of ZESPRI™ GOLD. This is 5% and 9% lower than 2004 yields, respectively. For the total New Zealand crop, 2005 production is expected to be similar to the 2004 level.

Gisborne

Gisborne kiwifruit growers have benefited from another excellent growing season. Orchards are irrigated, which offset the dry growing season. Harvesting started in early April and by mid-May, it was almost over. At least 75% of Gisborne's crop is packed under the early start programme. Production in 2005 will be on a par with 2004, at approximately 1.8 million trays regionally. Two-thirds of Gisborne's crop is Hayward, with the remainder being ZESPRI™ GOLD.

Hawke's Bay

Hawke's Bay has had a less favourable growing season than for their 2004 crop. Spring temperatures were two degrees lower. The resulting fruit is smaller in size and lacks length. The fruit looks as if it was not well pollinated, which may be due to bees preferentially visiting clover in adjacent pastureland (which flowered at the same time), dryness at pollination, and the cool temperatures. A number of growers will be reviewing their pollination approach to identify improvements for next season. No adverse events such as hail or frost occurred.

Yields appear to be 10-15% below 2004 levels.

Lower North Island

The Lower North Island had a good growing season for their 2005 crop and yields will be about average. Orchards around Wanganui damaged by the floods in February 2004 have been repaired, including replanting some vines. Yields on these orchards are poor, due to damage to the root systems caused by the flood. Some flood-affected vines are described as having "collapsed" during this growing season, although they have not died. Growers are hopeful of their recovery over time as the impaired root systems re-establish.

Nelson

Nelson has experienced a relatively favourable 2004/05 growing season. Winter chill units were good, leading to good flower numbers. Despite a very cool December, the growing season was warmer than average because of warmer conditions in October, November, February and March.

Most growers are now using overhead sprinklers for frost protection so, despite a few spring frosts and one autumn frost, there was very little impact on orchards. Hail storms in December that affected the pipfruit crop had little effect on kiwifruit.

Pollination conditions were very favourable and more growers this year made use of artificial pollination. Consequently, fruit shape has been exceptionally good in 2005.

Growers consider that hand pollination, girdling, and summer pruning have all combined to ensure fruit size is only slightly smaller than last year, despite the very cool December.

Fruit quality appears good. Growers are reporting similar packouts to 2004 and dry matter is better. Most growers consider greater attention to detail in their pruning, girdling and irrigation, combined with a dry late summer, have led to the higher dry matter. The Kiwistart early harvest programme was offered in Nelson for the first time in 2005 and about 10% of the crop was submitted for this programme.

The total crop out of Nelson will be about 3.5 million trays. Yield per hectare is expected to be slightly above 2004 and above long term averages, at 6,000 trays.

Financial Factors

2004/05 Review

Revenue

The model orchard revenue dropped 23% in 2004/05, due to lower prices received for the fruit. Industry-wide, the orchard gate return (OGR) for green fruit picked in 2004 will total \$4.32/tray, which is \$2.03/tray (32%) less than received for 2003 fruit. For ZESPRI™ GOLD, the OGR was \$5.50/tray, 24% lower, and for organic green fruit the OGR was \$6.05/tray, a drop of 30%. At harvest in 2004, growers had expected the revenue to be \$1.00/tray less than for the 2003 crop, due mainly to the exchange rate. The drop was more, with fruit quality problems and the substantial increase in crop volume also having a significant impact. ZESPRI, the grower-controlled kiwifruit marketing company, signalled to growers in late 2004 that the drop in returns would be larger, indicating around \$2.00/tray was likely.

Growers' high yields in 2004 have helped offset the significantly lower per tray prices. The 2004 yield was higher by 15% for the green variety and by 31% for the gold variety in the model orchard. Total New Zealand green kiwifruit production increased by 21% and organic production by 17%, due mainly to favourable growing conditions. Industry-wide gold volumes increased by 71% due to maturing orchards and favourable growing conditions.

The OGR/hectare calculated by ZESPRI using average yield and OGR/tray is shown in Table 3.

Table 3: ZESPRI-estimated OGR by Fruit Type (\$/ha)

Year of Harvest	ZESPRI™ GREEN \$	ZESPRI™ GREEN ORGANIC \$	ZESPRI™ GOLD \$
2004 crop	31,872	33,462	49,358
2003 crop	37,637	37,988	45,503
2002 crop	32,455	32,293	42,857
2001 crop	29,748	25,842	27,415

Source: Kiwifliers: 236, May 2005; 224, May 2004; May 2003

The model orchard total revenue was down 23%. Income from other fruit crops and sundry income, such as from hiring out orchard equipment, contributed around 4% of orchard revenue.

Expenditure

The model orchard cash expenditure was 10% higher than in 2003/04. Some of the increase in costs was due to growers adding orchard activities in pursuit of higher fruit dry matter for their 2005 crop. Spending was higher on labour, due to increased wage rates and more detailed work in the orchard. Production costs increased for pollination and pest control. Fertiliser costs reduced slightly. Some growers who had been trying out foliar supplementary fertiliser reduced their use of such products in line with the lower revenue expected. Spending on vehicles increased, due mainly to rising fuel costs. Spending on repairs and maintenance increased. Quite a bit of work has been done on orchard structures to repair timber towards the end of its useful life, or stressed from the heavy 2004 crop and at risk of breakages. Costs across most administration categories increased this year.

Net Result

The model cash orchard surplus (after deducting interest) was substantially reduced, by 70%, due to the combination of lower revenue and higher costs. The net trading profit was 80% lower for the same reasons. Growers have had several good years, including an unexpectedly good year in 2003/04, so are generally able to accommodate the drop this year. Although the revenue downgrade came after much of the year's strategic spending was made, growers have invested to ensure their orchards are in a sound position to weather lower revenues without compromising production. Their intention is to have low spending on repairs, capital and development in coming years.

Spending on development and capital purchases was 21% higher than in 2003/04. This spending varies hugely between growers. Typical purchases are orchard equipment such as a tractor, upgrading vine support structures, extending orchard blocks and installing permanent frost protection, particularly overhead sprinklers. This may require installing significant water storage ponds due to the large volumes of water required for sprinklers to be effective.

Total drawings in the model increased by 12% to \$64,700, and include off-orchard investment. Off-orchard income was derived from a mixture of investment income and employment. This includes growers' dividends from shares in ZESPRI Group Ltd and shares in kiwifruit post-harvest companies, so a proportion of this income is from off-orchard investments in the kiwifruit industry.

The amount of off-orchard income from working off the property for wages or a salary has been reducing and investment income increasing during the prosperous times in the kiwifruit industry in recent years.

2005/06 Forecast

Revenue

The forecast revenue for the model orchard in 2005/06 is 2% down on 2004/05. Growers expect a slightly lower yield, down 5% for green and 10% for ZESPRI™ GOLD. They expect revenue/tray to be 2% down for green and 10% lower for ZESPRI™ GOLD. This is a much lower drop than indicated by ZESPRI's calculations of the impact of currency movements between the two seasons. Growers consider better fruit taste and storage quality, plus a similar total crop volume, rather than the big production increase of 2004, will offset the currency effects. One calculation of the exchange rate impact indicates a negative effect of between 60 c and \$1.00/tray. ZESPRI make their first official forecast of fruit returns each year in late August. Final payments on the 2004 crop occurring in the 2005/06 year help to contain the revenue drop.

Expenditure

Growers are intending lower orchard spending in 2005/06 with the model orchard budgeted spending forecast to be 7% lower. Repairs and maintenance expenditure is expected to reduce due to the good state of orchard structures and equipment. Some savings on labour are also expected as growers review the results of activities carried out in 2004/05 to help target good fruit taste for the 2005 crop. The 2004 amendments to the Holidays Act governing pay rates on public holidays has impacted on kiwifruit picking and packing costs, as labour is required through the Easter, Anzac Day and Queen's

Birthday holidays. Most packhouses pool the extra costs of picking and packing on public holidays across all growers.

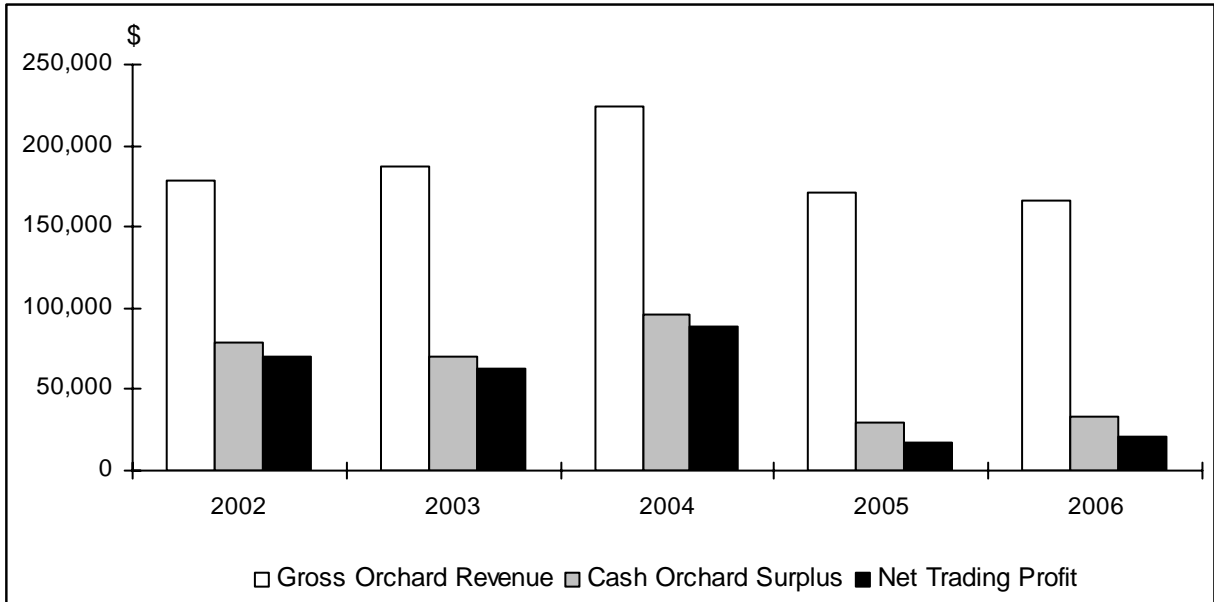
Net Result

The budgeted cash orchard surplus for 2005/06 is 11% higher than in 2004/05 due mainly to the lower costs offsetting slightly lower yields and revenue.

Growers are also planning lower drawings, development and capital spending in line with leaner times, and previous investment to bring the orchard and equipment to a good state of repair. Off-orchard income is forecast to be 14% lower. This is due to ZESPRI’s interim dividend being paid in 2004/05 and investment income not being budgeted, rather than being due to significant changes in employment or investment activities.

The forecast net cash position is negative but many growers are not unduly concerned due to having reasonable reserves, good asset values and ability to borrow or suspend principal payments to help improve their cash flow. Growers’ financial position varies considerably with many having little or no debt, and variations in yield and income making revenue quite dispersed about the averages represented by this model. Incentives paid for fruit characteristics, such as early harvest, size, storage quality, pest status and taste make a marked difference to revenue for an individual orchard.

Kiwifruit Profitability Trends



Note: Crop harvested in the preceding years, e.g., 2003 entry, means the crop has been harvested in 2002, etc.

Issues and Trends

Growers have weathered the lower returns reasonably well. The impact on incomes of lower fruit prices for the 2004 crop was eased by the increased production levels, and most growers are on a sound basis to handle lower returns after several good years. They are impressed by ZESPRI’s marketing performance and the ability of ZESPRI and the single point of market entry system to help offset downward pressures on grower returns. They consider the lower prices received for their 2004 crop will continue for a while, strongly influenced by the exchange rate between the New Zealand, Japanese and European currencies. They see rewards for individual orchard performance, and consider that there is still potential for good growers to do well from growing kiwifruit, even at the lower returns. They also appreciate their lifestyle.

The 2004 crop was the biggest volume of kiwifruit produced in New Zealand. The increase was due to a favourable growing season for both green and gold fruit, and to maturing ZESPRI™ GOLD

orchards. This caused logistical challenges during harvest and onshore storage. Significant investment to increase post-harvest capacity has been made since to handle the similar volume 2005 crop.

Fruit taste and quality of fruit after storage were significant issues for the 2004 crop. These are estimated to have cost the industry substantially in increased handling costs and through influencing fruit sales tactics and market confidence. Changes have been made for the 2005 season to help contain fruit quality problems onshore, and to the grower or post-harvest facility. Higher incentives will be paid for good tasting fruit and for segregating lines of fruit on the basis of taste. Large sized gold fruit was reported as having a particularly disappointing taste to buyers last year. A minimum dry matter level is now part of the grade standard for ZESPRI™ GOLD.

Incentives paid for fruit with high dry matter will increase significantly for the 2005 crop. In 2005 for the green variety, a maximum of 20% of the fruit payment will be allocated on the basis of fruit dry matter. For gold, the incentive is even greater, at a maximum of 55% of the fruit payment. This is around double last year's incentive for green kiwifruit, and four times for gold kiwifruit. Responding to the change in incentives has been a challenge for growers. There is considerable climatic influence on dry matter and substantial variation within and between orchards. Techniques to increase the proportion of high dry matter fruit are being researched. There is frustration among growers that they have done extra work in pursuit of higher dry matter for their 2005 crop, but have not achieved a notable increase. Activities include more detailed summer pruning. Other growers accept that research into this area is at a relatively early stage and are using this season to increase their knowledge. Growers and post-harvest operators have done additional dry matter sampling to gauge levels and changes during the growing season. This will provide them with reference points for next season and some means to interpret their results from the 2005 crop. The size of the premiums paid on the basis of taste will further widen the gap in returns between growers. Those in more favourable locations and/or more able to adopt orchard management strategies that increase dry matter, will receive higher revenue. Examples provided to growers indicate that prices may be increased or decreased by up to 50 c/tray for green kiwifruit, and nearly \$2.00/tray for gold kiwifruit. There is some concern in the industry that growers may not have factored in the impact that these changes in payment could have on their revenue, and that new entrants to the kiwifruit industry may be unaware of the overall range and complexity of the price incentives used.

Growers have endorsed the Single Point of Entry (SPE) as a critical component of their success, through ZESPRI International Ltd, the grower-controlled kiwifruit marketing company. For the ZESPRI™ GOLD variety, there is additional commercial strength in growers' position through ZESPRI's ownership of the Plant Variety Rights in addition to the commercial trademarks. The ability to supply customers with green, green organic and gold fruit benefits each fruit type in the marketplace as well. Shipping costs have increased significantly worldwide. The buying power of the SPE approach helped to contain the impact on kiwifruit growers. To further strengthen the SPE, a loyalty payment now paid to growers for a commitment of three years' production to ZESPRI will be paid to growers through their supplier, conditional on the supplier contracting all their fruit to ZESPRI on a three year rolling basis.

A review of the supply chain between the orchard and marketplace has been underway during the year. The aim is to look for ways to enhance returns and reduce costs. The supply chain includes services performed by suppliers (post-harvest groups) and ZESPRI, and the review is being jointly managed and funded by the growers' representative organisation, New Zealand Kiwifruit Growers Incorporated (NZKGI), ZESPRI and suppliers.

Amalgamation between post-harvest facilities has continued. Two suppliers are now listed on the NZAX board of the stock exchange with one of them planning to move to the main board. Growers have some concerns about balancing the potential efficiencies from consolidation with a threat to the single point of entry to market as suppliers get bigger and may want to take on roles currently performed by ZESPRI. Growers also expect to be treated equally and are concerned that larger suppliers may try to negotiate special treatment by ZESPRI.

Proposals have been investigated this year to better align the interests of growers and ZESPRI shareholders. Shares in ZESPRI were allocated to growers when the company was first formed in

April 2000. Growers had the opportunity to buy more shares as a capital raising exercise in 2001. Now, a significant proportion of ZESPRI shares are held by people who no longer supply fruit. Company voting rules apportion votes to fruit production, a rule voted in to maintain grower control of ZESPRI. Shares may be retained when a grower leaves the industry or leases out their orchard, and may be sold to other growers at any time. Non-voting shareholders receive dividends, which have been attractive. The dividend on ZESPRI shares was 75 c/share during 2004/05, comprising a final dividend of 50 c/share for 2003/04 and an interim dividend of 25 c/share for 2004/05. Shares have been traded at about \$4.00 each. In early 2005, to help improve the alignment between shareholding and production, shares were offered to growers whose orchard production was higher than their corresponding voting entitlement. There is also a proposal to provide some of ZESPRI profits to growers via a pre-determined formula. At present the margin ZESPRI earns on fruit is reviewed three yearly. A “profit share” formula is proposed to be more robust than relying on the margin review to separate fruit returns from ZESPRI corporate earnings.

The statutory body Kiwifruit New Zealand (KNZ) has a new Chair, Sir Brian Elwood, a former Chief Ombudsman. KNZ oversees the regulations that ZESPRI operates under, and organises the collaborative marketing programme under which exporters can apply to market fruit to specific markets with the revenue returning to the pool (rather than to growers individually), consistent with the SPE industry structure.

Labour continues to be a constraint to the industry, particularly during the harvest season. A labour co-ordinator was appointed in the Bay of Plenty for the first time this year to help co-ordinate workers for the harvest season. Similar positions have been operating successfully in other fruit growing areas for several seasons. Promotion of work opportunities has included roadside billboards near packhouses, increased website use and links to the Hawke’s Bay where the apple picking season usually finishes as kiwifruit begins. The labour co-ordinator has assisted with information about services such as childcare and transport. Initiatives to attract “backpackers” eligible for working holiday visas to harvesting jobs have also been made, co-ordinated at a national level by Horticulture New Zealand. The rain during harvest has been an issue, with pickers stood down during rain and not being able to work as much as they had expected. There have been instances of immigrants found working illegally in orchards, and some contractors prosecuted for tax evasion. Complying contractors consider these operators undercut their rates through their illegal practices. Contractors who are registered with the Contractors’ Association more readily obtain workers from Work and Income.

Several measures are underway to increase the skills and qualifications of those working in the kiwifruit industry, and attract more people to kiwifruit careers. A cadet scheme has been re-established and operating for several years now. The cadets combine paid work on orchards with release time for study modules towards a national qualification. The first group of students have completed a university Diploma in Horticulture via a regional programme based in Tauranga, which combines part time study with industry work. ZESPRI has awarded scholarships for university students studying full time towards qualifications relevant to the kiwifruit industry, as part of the kiwifruit centennial celebrations. NZKGI has obtained funding to set up training which will enable workers in the industry to obtain an Orchard Workers’ Certificate.

The Japan MAFF have made a change to their quarantine pest lists which will benefit the 2005 kiwifruit crop by reducing the likelihood of fumigation for insect pests. This is of particular importance for organic kiwifruit which cannot be sold as organic if fumigated. Inconsistent fruit supply due to fumigation has been a constraint to marketing organic New Zealand kiwifruit in Japan.

Organic ZESPRI™ GOLD kiwifruit is being produced in small volumes and in 2005 will receive a fixed \$2.00/tray premium over conventionally produced gold kiwifruit. Like the green kiwifruit, yields are lower than those for conventional growers. The premium per tray for organic green kiwifruit in 2004 averaged \$1.73/tray. The area in organic kiwifruit has declined slightly, due mainly to urbanisation of organic orchards on the perimeter of Tauranga city.

The 2004 kiwifruit crop was the first time the Horticulture Export Authority (HEA) legislation had operated for export of kiwifruit from New Zealand to Australia. Exporters had been working towards this for several seasons. The main impact has been having an enforceable minimum quality grade

standard. Pricing is reported as being higher and more stable. Exporters have jointly funded generic promotion for the first time. The higher pricing has helped reduce the attractiveness of re-export from Australia to Asia of New Zealand kiwifruit. ZESPRI has been a major contributor to the promotion funding in Australia this year and has agreed to market only Class I product in Australia.

The gold variety is owned by ZESPRI and growers of the variety are licensed for their orchard area. There is a moratorium on issuing additional licences, with projections from current licences considered able to produce sufficient New Zealand produced ZESPRI™ GOLD. The moratorium is reviewed by ZESPRI periodically and, so far, has been supported by grower groups. Growers are able to transfer unused licences, or those from blocks being removed, to new orchards. There are buyers seeking ZESPRI gold licences and reportedly willing to pay growers around \$35,000/ha for them. Some orchards which have had a disappointing yield of ZESPRI™ GOLD will convert the vines back to green kiwifruit, using income from selling their gold licence to help cover costs.

ZESPRI has licensed gold kiwifruit plantings in overseas countries, both as a condition of the Plant Variety Right and to increase the availability of gold fruit outside the New Zealand supply season. As part of the licence agreement, ZESPRI markets the fruit. The largest plantings are in Italy where there is already a large kiwifruit industry. New Zealand based partners are involved in most ventures and some New Zealand staff experienced with gold kiwifruit are living in Italy to assist with the developments. Adapting growing methods to different climate and soils has been challenging. Plantings in California have been less successful due to the hot, dry climate disrupting growth cycles.

There are a handful of significant-sized kiwifruit orchard developments underway in the Bay of Plenty. These tend to be highly specified developments aiming for precocious and high production. These are all in green kiwifruit which does not require a licence, because new licences for ZESPRI GOLD are not available. The success of a number of young orchards now in production has validated the development approach. Most developments are on behalf of groups already involved in the kiwifruit industry.

Orchard prices have weakened slightly in 2005. Sales have slowed over the past 12 months with the lower fruit revenue. Growers consider the industry to be sound so are not prepared to drop prices to sell. For those wishing to reduce their day-to-day orchard input, there are options to have their orchard managed or leased. The high orchard prices have deterred existing owners from expanding by buying existing orchards. Some growers have expanded by developing new orchard area in neighbouring land or on undeveloped parts of their existing properties.

Urban expansion in the western Bay of Plenty continues, with some kiwifruit orchards in areas likely to become urbanised or to be developed into industrial subdivisions in the future. This is particularly significant near Tauranga, but preliminary proposals for urban expansion around Te Puke also take in a sizeable area of top quality horticultural land currently used to grow kiwifruit. A project to manage and locate suitable areas for growth has recognised the significance of kiwifruit and other primary industries to the regional economy, and it is intended to select areas for urban development which also preserve the rural economic base. A detailed economic analysis by Waikato University in 2004 calculated the kiwifruit industry comprises around 20% of the Bay of Plenty's gross regional product and 1% of New Zealand GDP.

The damage from spring frosts in several recent seasons, coupled with removal of insurance cover for spring frosts, has inspired many growers to install frost protection systems. Overhead sprinklers are particularly popular due to their success at combating frosts. Access to sufficient water supply is important because of the high volume of water required. Storage ponds have been built on a number of orchards. One community irrigation scheme in Opotiki has increased the scheme water supply capacity to accommodate frost protection. The frost protection system is designed to also provide orchard irrigation during the growing season, which is encouraging more growers to use irrigation and more sophisticated means to schedule irrigation use.

Horticulture New Zealand is being established to represent the interests of New Zealand growers of fruits and vegetables. The new organisation combines around 8,000 growers previously represented separately by the Fruitgrowers', Vegetable Growers' and Berryfruit Growers' Federations. The new

organisation focuses on common issues like seasonal labour, resource management and legislation. Sector organisations like NZKGI continue to work on sector-specific issues.

In 2004 it was 100 years since the first kiwifruit seeds were brought into New Zealand. ZESPRI organised celebrations which helped raise the profile of the kiwifruit industry within New Zealand and overseas, through media representatives who were invited to celebratory events.

Growers are aware of how dependent their income is on the effectiveness of New Zealand's biosecurity systems at keeping out pests because of market sensitivity and potential production impacts. The foot and mouth hoax in May 2005 was a further reminder of this.

Kiwifruit Budget

	2004/05			2005/06f		
	Whole orchard	per ha	per Class I tray	Whole orchard	per ha	per Class I tray
Revenue						
Green - OGR progress	127,945	28,432	3.85	121,275	26,950	3.85
- previous crop final	10,368	2,304	0.31	15,620	3,471	0.50
Gold - OGR progress	24,157	48,314	4.93	20,470	40,940	4.60
- previous crop final	1,988	3,976	0.41	2,793	5,586	0.63
Other fruit crops	3,300	660	0.09	3,500	700	0.10
Sundry orchard income	3,270	654	0.09	3,000	600	0.08
Gross orchard revenue	171,028	34,206	4.49	166,658	33,332	4.64
Cash orchard expenditure	125,340	25,068	3.29	117,570	23,514	3.27
Interest	16,000	3,200	0.42	16,010	3,202	0.45
Rent and/or leases	0	0	0.00	0	0	0.00
Cash orchard surplus	29,688	5,938	0.78	33,078	6,616	0.92
Stock on hand adjustment	0	0	0.00	0	0	0.00
Depreciation	12,120	2,424	0.32	11,600	2,320	0.32
Net trading profit	17,568	3,514	0.46	21,478	4,296	0.60
Taxation	9,500	1,900	0.25	7,610	1,522	0.21
Net trading profit after tax	8,068	1,614	0.21	13,868	2,774	0.39
Allocation of Funds						
Add back depreciation	12,120	2,424	0.32	11,600	2,320	0.32
Add back stock value adjustment	0	0	0.00	0	0	0.00
Drawings	64,700	12,940	1.70	57,400	11,480	1.60
Principal repayments	5,180	1,036	0.14	5,510	1,102	0.15
Development	18,500	3,700	0.49	6,700	1,340	0.19
Capital purchases	10,300	2,060	0.27	2,000	400	0.06
Disposable surplus/deficit	-78,492	-15,698	-2.06	-46,142	-9,228	-1.28
Other Cash Sources						
New borrowing	0	0	0.00	0	0	0.00
Off-orchard income	27,500	5,500	0.72	23,500	4,700	0.65
Other orchard income	0	0	0.00	0	0	0.00
Net cash change	-50,992	-10,198	-1.34	-22,642	-4,528	-0.63
Assets and Liabilities						
Land and building (opening)	1,750,000	350,000	45.89	1,600,000	320,000	44.51
Plant and machinery (opening)	52,000	10,400	1.36	69,000	13,800	1.92
Stock valuation (opening)	0	0	0.00	0	0	0.00
Total orchard capital	1,802,000	360,400	47.26	1,669,000	333,800	46.43
Total debt opening	181,600	36,320	4.76	176,100	35,220	4.90
Equity (orchard assets-liabilities)	1,620,400	324,080	42.49	1,492,900	298,580	41.53

Kiwifruit Budget

	2004/05 \$			2005/06f \$		
	Whole orchard	per ha	per Class I tray	Whole orchard	per ha	per Class I tray
Orchard Working Expenses						
Wages	55,500	11,100	1.46	50,500	10,100	1.40
Picking wages	11,440	2,288	0.30	11,500	2,300	0.32
ACC	2,600	520	0.07	2,300	460	0.06
Electricity	925	185	0.02	1,000	200	0.03
Spray and chemicals	6,850	1,370	0.18	6,850	1,370	0.19
Pollination	6,450	1,290	0.17	6,450	1,290	0.18
Fertiliser	5,800	1,160	0.15	5,800	1,160	0.16
Vehicle costs	8,000	1,600	0.21	7,700	1,540	0.21
Repairs and maintenance	13,000	2,600	0.34	10,500	2,100	0.29
Rates	3,250	650	0.09	3,270	654	0.09
Communication costs (phone/mail)	2,400	480	0.06	2,400	480	0.07
Insurance	1,975	395	0.05	2,000	400	0.06
Accountancy	3,300	660	0.09	3,400	680	0.09
Legal and consultancy	1,100	220	0.03	1,300	260	0.04
Other administration	950	190	0.02	800	160	0.02
Other expenditure	1,800	360	0.05	1,800	360	0.05
Cash orchard expenditure	125,340	25,068	3.29	117,570	23,514	3.27
Calculated Ratios						
Economic orchard surplus (or EBIT)	-15,452	-3,090	-0.41	-10,202	-2,040	-0.28
Cash orchard expenditure/GOR	73%			71%		
EOS/total orchard capital	-0.9%			-0.6%		
EOS less interest & lease/equity	-1.9%			-1.8%		
Interest+rent+lease/GOR	9%			10%		
EOS/GOR	-9%			-6%		
Economic orchard surplus (EOS) is calculated as follows:						
Gross revenue + change in stock value-orchard working expenses-depreciation-wages of management						
Wages of management = 1% of opening total orchard capital + \$31,000 (to a maximum of \$75,000)						

Viticulture

Model Description

This is the second year that MAF has monitored grape growers as part of its annual monitoring process. The dynamic growth of the industry, and the increasing influence this sector has on New Zealand export earnings, have increased demand for information such as that provided by these models.

This report produces two model budgets representing owner-operated vineyard businesses where the primary source of income is from grape growing. The model excludes the smaller lifestyle properties and the larger corporate businesses. The two budgets represent the Hawke's Bay and Marlborough regions which, between them, produce 74% of the national grape harvest. The climate and production text reflects all grape-growing districts.

Viticulture income commonly spans two financial years, with deferred payments occurring in the following financial year. For ease of comparison, these models have included deferred payments in the same financial year as grapes were harvested, rather than the following financial year.

Table 1: Key Parameters

	Marlborough			Hawke's Bay		
	2004	2005	2006f	2004	2005	2006f
Planted area (ha)	25.8	28.2	28.1	17.3	17.3	16.9
Total production (tonnes)	231	218	255	178	139	158
Average return (\$/tonne)	2,289	2,183	2,132	1,631	1,596	1,752
Cash vineyard revenue (\$)	530,866	492,971	556,032	295,088	232,770	286,425
Cash vineyard surplus (\$)	214,244	164,042	223,092	154,957	61,719	118,659
Net trading profit (\$)	169,548	138,560	198,467	134,501	47,116	105,797

Key Points

- The 2005 crop volume was down on the record vintage of 2004. This was mainly due to cold conditions during flowering.
- Average prices per tonne have fallen for the major varieties in 2005 in each model by 5-15% from 2004 prices.
- Maintaining the quality of New Zealand wine is a major issue for the industry in ensuring its continued success.
- The large vintage in 2004 caused some nervousness in the industry about the ability to market the supply. However, recent strong export performance has eased this concern.

Physical Factors

Climate

A cold 2004 spring around the country was the defining climatic characteristic of the 2005 vintage. December 2004 in particular was unseasonably cold and, in some places, also windy and wet. This had a negative impact on flowering, delaying it by several weeks, or causing patchy flowering in some regions. Poor flowering and fruit set meant yields were much lighter in some regions compared with 2004.

However, the season took a turn for the better in January 2005, with much of the country experiencing long, warm, dry periods of settled weather through to mid March. These excellent summer conditions

enabled some crops to catch up on their late start to be on par with 2004. An extended period of rain in mid-March subsequently interrupted harvest in Gisborne, Hawke's Bay, and Wairarapa. This put pressure on gathering any crop that was ripe before splitting and botrytis became a problem. Rain at Easter in the Nelson/Marlborough region also caused headaches for many growers, and an early frost in May dropped leaves in places.

Production

The final figures for the 2005 vintage were not available at the time of writing, but the industry is predicting a vintage of around 140,000, tonnes which is well down on the record crop of 166,000 tonnes achieved in 2004.

The national grape intake by variety for the last five years is displayed in Table 2. Warm weather at flowering and during early bunch development resulted in excellent fruit set and large bunch weights in 2004. The outcome was a vintage of more than double the volume harvested in 2003, when unseasonably cold weather and frosts reduced the total crop to just 76,400 tonnes.

Table 2: New Zealand Vintages (tonnes)

	2000	2001	2002	2003	2004
Grape Variety					
Sauvignon Blanc	15,472	20,826	36,742	28,266	67,773
Chardonnay	23,593	17,067	33,883	15,543	35,597
Pinot Noir	6,319	8,015	10,402	9,402	20,145
Merlot	4,090	2,573	6,502	4,957	9,330
Riesling	4,070	4,377	5,038	3,376	5,647
Cabernet Sauvignon	3,792	2,782	4,375	3,201	4,045
Muller Thurgau	6,353	4,231	4,806	1,685	3,888
Semillon	2,189	1,887	3,053	2,192	3,511
Pinot Gris	572	747	1,214	836	1,888
Muscat Varieties	3,487	1,694	2,623	1,242	1,828
Chenin Blanc	1,992	1,041	1,322	391	1,325
Gewurztraminer	594	460	990	529	1,325
Reichensteiner	1,185	723	1,184	644	1,140
Malbec	363	273	731	458	1,106
Pinotage	868	487	863	588	917
Cabernet Franc	702	332	827	602	858
Syrah	257	244	397	330	691
Other white vinifera	393	801	1,253	330	668
Other red vinifera	400	375	430	221	400
All hybrids	20	51	51	38	17
Total	78,069	68,986	116,686	74,822	162,100
Industry total*	80,100	71,000	118,700	76,400	166,000
Region					
Marlborough	26,212	36,962	54,496	40,537	92,581
Hawke's Bay	23,886	10,887	25,661	10,832	30,429
Gisborne	21,820	12,936	26,587	14,350	25,346
Nelson	1,125	2,313	1,785	3,149	4,563
Canterbury	788	1,779	1,972	1,422	2,825
Wellington	1,124	1,457	2,022	1,311	2,820
Auckland	1,363	614	1,526	715	1,497
Otago	1,009	1,543	1,519	1,825	1,439
Waikato/BOP	637	411	932	497	457
Northland	105	84	186	182	144
Other	0	0	0	0	0
Total	78,069	68,986	116,686	74,820	162,100
Industry Total*	80,100	71,000	118,700	76,400	166,000

Source: New Zealand Winegrowers Vineyard Surveys

*Industry Total represents the tonnes crushed by the total wine industry. The difference between "Total" and "Industry Total" is data from wine companies who did not respond to the NZ Winegrowers Annual Vintage Survey.

Expansion of plantings continues to occur at a rapid pace. Table 3 outlines the total producing area of each grape variety for 2004 and the projected producing area up to 2007. The figures indicate that the producing area will increase to over 22,000 hectares (ha) by 2007.

Table 3: New Zealand Production Vineyard Area (ha)

	2003*	2004*	2005*	2006*	2007*
Grape Variety					
Sauvignon Blanc	4,516	5,897	7,043	7,569	8,016
Pinot Noir	2,624	3,239	3,623	3,959	4,020
Chardonnay	3,515	3,617	3,731	3,865	3,884
Merlot	1,249	1,487	1,592	1,629	1,629
Riesling	653	666	806	859	869
Pinot Gris	316	381	494	672	766
Cabernet Sauvignon	741	687	678	666	671
Other and Unknown	627	249	308	418	446
Semillon	257	306	336	331	336
Gewurtztraminer	197	210	258	277	281
Syrah	134	183	222	253	264
Cabernet Franc	180	213	210	215	247
Malbec	152	168	180	182	188
Muscat Varieties	134	136	137	130	130
Muller Thurgau	256	155	132	109	101
Pinotage	82	82	84	88	82
Chenin Blanc	108	72	71	67	63
Reichensteiner	59	61	55	45	31
Total	15,800	17,809	19,960	21,334	22,024
Region					
Marlborough	6,831	8,539	9,877	10,443	10,907
Hawke's Bay	3,702	3,873	4,326	4,582	4,665
Gisborne	1,885	1,810	1,853	1,874	1,857
Otago	703	844	942	1,118	1,137
Canterbury/Waipara	601	716	862	1,066	1,131
Wairarapa	595	737	758	788	794
Nelson	485	548	588	659	688
Auckland	461	591	594	643	684
Other and Unknown	395	457	513	546	564
Waikato/BOP	142	151	159	162	162
Total	15,800	18,266	20,472	21,881	22,589

Source: New Zealand Winegrowers Vineyard Surveys

* Some forecast totals have been adjusted given the survey represents 97.5% of total plantings.

Marlborough remains New Zealand's most dominant wine-growing region, with over 8,500 ha, or 47%, of the total producing area in 2004. This is forecast to increase to about 10,900 ha by 2007. Hawke's Bay is the second largest region in terms of producing area with 3,873 ha (21%), followed by Gisborne with 1,810 ha (10%).

Strong growth rates in producing areas from 2004 to 2007 are forecast in particular for South Island growing regions; Waipara (63% increase), Canterbury (52%), Otago (35%), Marlborough (28%) and Nelson (26%). The producing area in the Gisborne region is forecast to remain static over the next few years and, by 2007, the region's contribution to the national producing area is forecast to decline to just 8%.

White varieties accounted for 65% of total producing area in 2004. Sauvignon Blanc currently stands out as the major planted variety and this position will become more pronounced by 2007. Chardonnay is a distant second and major growth in planting area is not expected out to 2007. Pinot Noir is expected to overtake Chardonnay in producing area by 2007.

Continuing strong growth from 2004 to 2007 is also forecast for Pinot Gris, Riesling, Syrah, Viognier and Gewürztraminer.

The contribution of bulk varieties to national planted area is expected to decline over the next few years, along with Chardonnay, Cabernet Sauvignon and Merlot.

The number of growers registered with the industry organisation (New Zealand Winegrowers) in 2004 was 594, a decline of 6% on the previous year. This trend is likely to be the result of the industry recognising economies of scale arising from consolidation, particularly in vineyard operations. This trend is expected to continue, along with the inevitable departure of unprofitable operators.

Stop Press

Industry figures for the 2005 year were released just before this report was sent to press. The 2005 vintage reached a total of 142,000 tonnes of grapes, 14% lower than the record 2004 crop.

Sauvignon Blanc was clearly the largest variety, making up 45% of the vintage. Pinot Noir led red grape production at 10% of the vintage.

Marlborough harvested 58% of the vintage, followed by Hawke's Bay at 20% and Gisborne at 16%.

Hawke's Bay Financial Factors

The Hawke's Bay vineyard model has a planted area of 17.32 ha. The geographical spread of the 18 growers surveyed ranges from coastal vineyards through to growers in the Gimblett Gravels. Only the areas of Esk Valley and Bay View are not represented. The dominant grape variety is Chardonnay while other significant varieties contributing to vineyard profitability are Merlot and Sauvignon Blanc. There is currently a lot of development work being undertaken in this model, with some of the bulk varieties being pulled out and up and coming varieties being planted.

2004/05 Review

Revenue

Gross revenue for the model vineyard in 2005 was \$233,000 based on a total production of 139 tonnes over 17.32 ha. This is a decrease of 22% on the 2004 season, attributable to a decrease in average yield from 10.3 tonnes/ha to 8.0 tonnes/ha as a result of the cold December.

Average per tonne prices for the three major varieties in the Hawke's Bay model also fell in 2005, contributing to the fall in gross revenue. The average price per tonne for Merlot fell by 15%, Chardonnay (Mendoza and Clone 15) by 12%, and Sauvignon Blanc by 8%, reflecting the downward pressure on prices that growers have experienced this season.

The variety mix in the model has changed slightly from 2004, with the separation of Pinot Noir (for sparkling wine) from the "other reds" category. Pinot Noir grown for sparkling wine has taken the place of Muller Thurgau, which is slowly being phased out of the model as growers replace Muller Thurgau vines with more premium wine varieties.

Expenditure

Total cash vineyard expenditure in 2005 was \$144,000, up 21% on 2004.

Wages have increased by 32%, particularly pruning and "other" wages. The increase in pruning cost is attributable to both a rise in the price of labour and also reflects the change in grower labour input into the model. In 2005, more vineyard owners employed permanent staff or managers to do work on the

property, rather than using their own “unpaid” time. Wages in the “other” category have also more than doubled since 2004, reflecting the labour requirements of vineyard development and re-planting.

Operating costs in 2005 are similar to those in 2004. The price of machine harvesting has increased by 15%, and contract machinery work has almost doubled. The increase in contract machinery work (other than machine harvesting) again reflects the development work being undertaken in Hawke’s Bay vineyards in 2005. Some growers also switched from hand leaf plucking to machine leaf plucking in 2005 to reduce vineyard expenditure.

Administration and property expenses have also increased since 2004. This is due to increases in the cost of compliance, rates, professional fees, and general insurance.

Wages now represent 49% of total cash vineyard expenditure, operating costs represent 39%, and administration/property expenses 12%.

Net Result

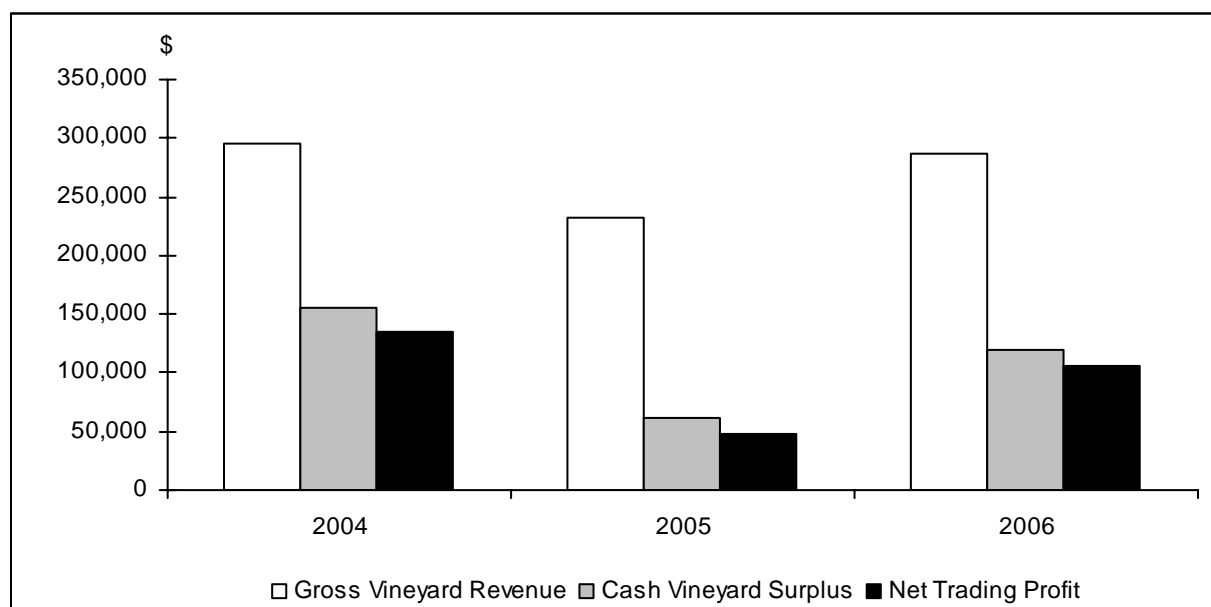
The cash vineyard surplus for the model in 2005 has decreased 60% from 2004. This is due to the combination of lower yields, lower prices and higher cash vineyard expenditure. Interest payments also doubled from 2004, reflecting new borrowing, interest-only loan repayments, and growers coming off lower fixed interest rates from loans taken out to cover income losses from the frosted 2003 crop.

Net trading profit after tax dropped 76% to just \$31,000, or \$1,800/ha.

Drawings for the model in 2005 were 55% lower than in 2004, reflecting the decrease in owner labour input in 2005. Principal repayments were also very low in 2005 as many growers were on interest-only term loans.

Development expenditure in 2005 increased more than four-fold on 2004, as many growers in the model replanted part of their vineyards this season.

Hawke’s Bay Profitability Trends



2005/06 Forecast

Revenue

Gross vineyard revenue for 2006 is forecast to be \$277,000, an increase of 25% on 2005. This is a result of a predicted rise in yield to an average of 9.4 tonnes/ha.

Average per tonne prices for Chardonnay (Mendoza and Clone 15) and Merlot are predicted to increase slightly in 2006. This is not due to a forecast increase in base price, but rather an increase in predicted Brix levels. Many contract growers are paid using a Brix bonus system, so aiming for high Brix levels in 2006 brings average prices up slightly.

The category “other whites” is forecasting a large increase in average price in 2006. This represents the move away from bulk varieties to premium wine varieties. In 2005, Muller Thurgau made up a large proportion of the “other whites” yield. In 2006, Muller Thurgau completely drops out of the model leaving this category made up of Gewürztraminer, Riesling, Semillon and Viognier. The proportion of Chenin Blanc also decreases, so with the decrease in these bulk, low paying varieties, the average price for this category rises.

Expenditure

Cash vineyard expenditure in 2006 is forecast to remain around the same level as in 2005. The cost of fuel is forecast to increase, bringing vehicle expenses up by 10%.

Net Result

The cash vineyard surplus is forecast to be \$119,000 for 2006, up significantly on the previous year due to higher predicted yields and higher average prices for all varieties.

Net trading profit after tax is forecast to increase to \$4,850/ha, up 174% on the net trading profit after tax of \$1,800 in 2004.

Capital purchases are expected to fall in 2006 as growers finish installing frost protection equipment and reduce expenditure on large items after a tight season in 2005.

Vineyard property prices are expected to plateau in 2006, while average vineyard debt increases by \$13,300, or \$786/planted hectare.

Hawke's Bay Viticulture Budget

	2005 \$			2006f \$		
	Whole Vineyard	per planted ha	per tonne gross	Whole vineyard	per planted ha	per tonne gross
Revenue						
Income from grapes (current)	221,319	12,778	1,595.90	276,636	16,311	1,751.57
Other orchard income	11,451	661	82.57	9,789	577	61.98
Gross vineyard revenue	232,770	13,439	1,678.48	286,425	16,888	1,813.55
Cash vineyard expenditure	143,616	8,292	1,035.60	140,000	8,255	886.44
Interest	27,435	1,584	197.83	27,766	1,637	175.81
Rent and/or lease		0	0.00		0	0.00
Cash vineyard surplus	61,719	3,563	445.05	118,659	6,996	751.31
Depreciation	14,603	843	105.30	12,862	758	81.44
Net trading profit	47,116	2,720	339.75	105,797	6,238	669.87
Taxation	16,406	947	118.30	23,465	1,384	148.57
Net trading profit after tax	30,710	1,773	221.45	82,332	4,854	521.30
Allocation of Funds						
Add back depreciation	14,603	843	105.30	12,862	758	81.44
Drawings	18,694	1,079	134.80	21,556	1,271	136.49
Principal repayments	1,187	69	8.56	3,917	231	24.80
Development	12,147	701	87.59	8,706	513	55.12
Capital purchases	20,614	1,190	148.64	8,889	524	56.28
Disposable surplus/deficit	-7,329	-423	-52.85	52,126	3,073	330.04
Other Cash Sources						
New borrowing	4,592	265	33.11	13,333	786	84.42
Off-orchard income	9,820	567	70.81	9,806	578	62.09
Other cash income	4,465	258	32.20	5,222	308	33.06
Net cash change	11,548	667	83.27	80,487	4,746	509.62
Assets and Liabilities						
Land and building (opening)	2,265,139	130,782	16,333.62	2,265,139	133,558	14,342.15
Plant and machinery (opening)	82,543	4,766	595.21	81,225	4,789	514.29
Total vineyard capital	2,347,682	135,547	16,928.83	2,346,364	138,347	14,856.45
Total debt opening	308,131	17,790	2,221.89	317,215	18,704	2,008.51
Equity (vineyard assets-liabilities)	2,039,551	117,757	14,706.94	2,029,149	119,643	12,847.94

Hawke's Bay Viticulture Budget

	2005 \$			2006f \$		
	Whole vineyard	per planted ha	per tonne gross	Whole vineyard	per planted ha	per tonne gross
Vineyard Working Expenses						
Wages						
Pruning and tying down	23,456	1,354	169.14	22,498	1,327	142.45
Tucking and shoot thinning	7,366	425	53.12	7,456	440	47.21
Bunch thinning and leaf plucking	8,174	472	58.94	7,483	441	47.38
Hand harvesting	1,120	65	8.08	1,111	66	7.03
Other	29,446	1,700	212.33	28,408	1,675	179.87
ACC	1,284	74	9.26	1,268	75	8.03
	70,846	4,090	510.86	68,224	4,023	431.97
Operating Costs						
Spray and chemicals	13,769	795	99.29	13,850	817	87.69
Contract spraying	732	42	5.28	722	43	4.57
Contract machine work	2,176	126	15.69	1,648	97	10.43
Machine harvesting	12,114	699	87.35	11,904	702	75.37
Fertiliser	1,504	87	10.85	1,649	97	10.44
Electricity	1,596	92	11.51	1,619	95	10.25
Sundry expenses	7,312	422	52.73	7,811	461	49.46
Vehicles	8,422	486	60.73	9,100	537	57.62
Repairs and maintenance	7,928	458	57.17	7,133	421	45.16
	55,553	3,207	400.59	55,436	3,269	351.00
Administration and Property Expenses						
Communication						
Levies and subscriptions	1,642	95	11.84	1,687	99	10.68
Rates	1,840	106	13.27	2,007	118	12.71
Accountancy, consultancy, legal	4,863	281	35.07	4,904	289	31.05
General insurance	4,125	238	29.74	3,306	195	20.93
Crop insurance	2,539	147	18.31	2,559	151	16.20
Other	2,208	127	15.92	1,877	111	11.88
	17,217	994	124.15	16,340	963	103.46
Cash orchard expenditure	143,616	8,292	1,035.60	140,000	8,255	886.44
Calculated Ratios						
Economic vineyard surplus (or EBIT)	20,074	1,159	144.75	79,099	4,664	500.83
Cash vineyard expenditure/GVR	62%			49%		
EVS/total vineyard capital	0.9%			3.4%		
EVS less interest & lease/equity	-0.4%			2.5%		
Interest+rent+lease/GVR	11.8%			9.7%		
EVS/GVR	8.6%			27.6%		
Economic orchard surplus (EVS) is calculated as follows:						
Gross revenue-cash vineyard expenditure-depreciation-wages of management						
Wages of management = \$31,000 + 1% of opening total vineyard capital to a maximum of \$75,000						

Hawke's Bay Viticulture Production and Income Details

Variety	2005						
	Area (ha)	Production Per Hectare (t/ha)	Total Production (tonnes)	Gross Yield %	Brix Level (Brix)	Return (\$/tonne)	Revenue (\$)
Cabernet Sauvignon	1.91	4.7	9.0	6	22.3	2,813	25,189
Chardonnay - all other clones	0.52	9.0	4.7	3	20.1	1,348	6,304
Chardonnay - Mendoza & Clone 15	4.33	7.2	31.2	22	22.0	1,674	52,189
Merlot	3.46	7.3	25.3	18	22.6	1,826	46,174
Other red	1.04	4.9	5.1	4	22.7	1,999	10,179
Other white	2.08	10.9	22.7	16	23.6	1,022	23,238
Cabernet Franc	0.52	6.0	3.1	2	22.4	2,322	7,203
Pinot Noir - still table	0.52	6.9	3.6	3	22.6	1,530	5,485
Pinot Noir – sparkling	0.52	18.9	9.8	7	19.0	920	9,035
Sauvignon Blanc	2.42	10.0	24.2	17	20.1	1,498	36,324
Total area available for grapes	17.32	8.0	138.7	100		1,596	221,319

Variety	2006f						
	Area (ha)	Production Per Hectare (t/ha)	Total Production (tonnes)	Gross Yield %	Brix Level (Brix)	Return (\$/tonne)	Revenue (\$)
Cabernet Sauvignon	2.04	7.0	14.2	9	23.2	2,799	39,705
Chardonnay - all other clones	0.51	10.8	5.5	3	22.4	1,572	8,637
Chardonnay - Mendoza & Clone 15	4.41	9.0	39.8	25	23.1	1,710	68,090
Merlot	3.39	8.8	29.7	19	23.5	1,863	55,420
Other red	1.19	6.5	7.7	5	24.1	2,158	16,653
Other white	1.02	12.6	12.8	8	25.4	1,519	19,399
Cabernet Franc	0.51	7.3	3.7	2	24.1	2,297	8,473
Pinot Noir - still table	0.51	7.5	3.8	2	22.8	1,765	6,708
Pinot Noir - sparkling	0.73	15.2	11.0	7	19.2	936	10,341
Sauvignon Blanc	2.54	11.7	29.7	19	21.1	1,457	43,210
Total area available for grapes	16.84	9.4	157.9	100		1,752	276,636

Marlborough Financial Factors

The Marlborough vineyard model has a planted area of 28.2 ha. The majority of the 18 growers surveyed are located in the Wairau valley with the remainder growing grapes in the Awatere valley. The dominant grape variety is Sauvignon Blanc while other significant varieties contributing to vineyard profitability are Pinot Noir, Chardonnay and Riesling. The majority of the planted vineyard (88%) is producing. The remaining area (12%) was planted since 2003 and should be viewed as either non-producing or area under development.

2004/05 Review

Revenue

Gross revenue for the Marlborough model in 2005 was \$493,000 based on a total production of 218 tonnes over 28.2 ha. This represented a decrease in revenue of 7% on 2004, despite an increase in vineyard planted area of 2.4 ha.

This fall in revenue in 2005 was the result of a decline in average production to 7.7 tonnes/ha due to a cold and wet December, combined with a fall in average price per tonne.

Pinot Noir was the only variety that recorded an increase in average price, rising to \$3,260/tonne. This increase in price is likely to be the result of the demand/supply relationship between Pinot Noir grown in Marlborough and Central Otago. In 2005 Central Otago experienced adverse weather conditions during flowering leading to a disappointing harvest. Demand for Marlborough Pinot Noir consequently increased, driving up prices.

The model variety mix has changed since 2004 with the proportional area planted in Sauvignon Blanc increasing from 65% to 68%. Red varieties other than Pinot Noir have also disappeared from the model as site selection has become more important when choosing which varieties to grow.

Expenditure

Cash vineyard expenditure in 2005 was \$261,700, up 5% on 2004.

Pruning costs have increased significantly from 2004, reflecting Marlborough's shortage of skilled labour and increasing wage rates. The increase in pruning cost may also reflect the change in vine age, as young plantings require greater pruning input. Wages for other tasks such as shoot and bunch thinning were down due to the cooler weather rather than a price reduction in actual wages paid.

Wages, at 54%, represent the majority of cash vineyard expenditure. Operating costs in 2005 have increased marginally from 2004, while administration and property costs have actually decreased.

Net Result

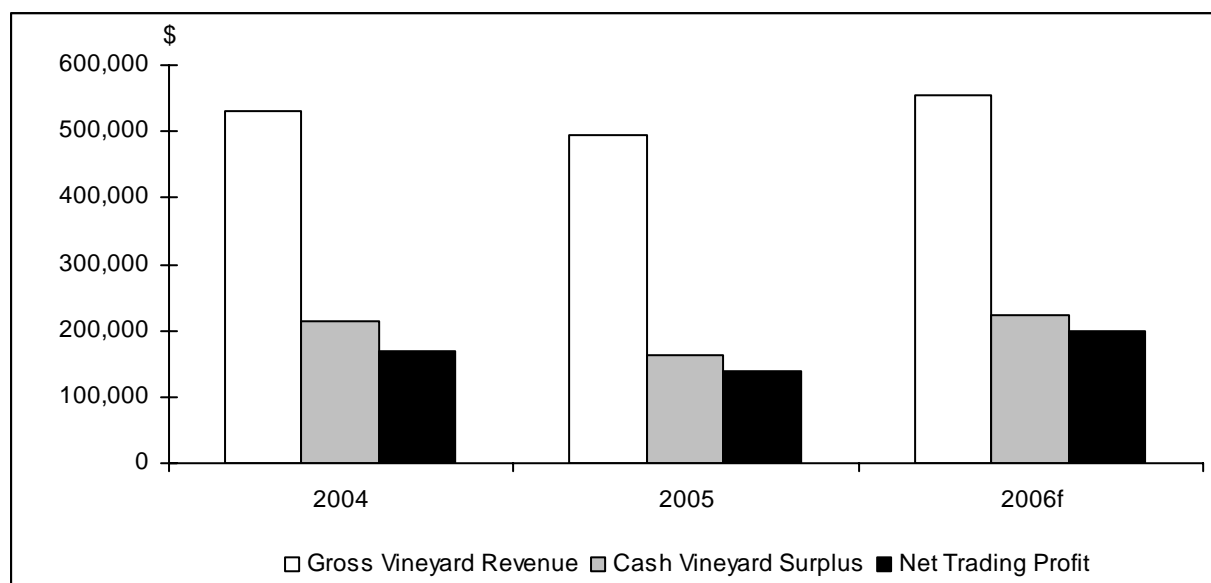
The cash vineyard surplus in 2005 was \$164,000, a decrease of 30% on 2004. This is due mainly to lower yields and lower prices for the main varieties.

Net trading profit after tax dropped to \$104,000.

Capital expenditure is up on 2004, reflecting growers spending some of the cash surplus from the previous year's profitable season. Some of this expenditure has gone on new irrigation drip lines to ensure water supply for maintaining quality in dry years ahead.

The average market value for land and buildings in 2005 has increased by 7% to just over \$163,000/ha. Escalating land prices, combined with tighter profit margins, have reduced the return on capital from 4% to just 2.8% in 2005.

Marlborough Profitability Trends



2005/06 Forecast

Revenue

Gross vineyard revenue for 2006 is forecast to be \$556,000. This improvement in gross income compared with 2005 is due mainly to yields returning to a more desirable level, at 9.1 tonnes/ha. Some erosion in the average price per tonne is forecast for Sauvignon Blanc, dropping from \$2,247 to \$2,156/tonne. There is also some decline in price for Pinot Noir (for still table wine) and Chardonnay.

Expenditure

Cash vineyard expenditure is not forecast to increase significantly in 2006, rising to \$266,000, or 9,470/ha.

The main expenditure item causing concern for growers is pruning and tying down, where a 7% increase is predicted. The total vineyard area in Marlborough to be pruned has increased dramatically in recent years, with labour availability lagging behind. Strong competition for this scarce resource has led to costs per hectare in Marlborough being significantly higher than those in Hawke's Bay. The industry has recently developed a viticulture working party to regularly monitor the labour situation. This is helping the industry to more quickly identify and take action on labour and accommodation related problems.

Other areas of expenditure increase are vehicles and fuel (3%), electricity (8%) and sprays/chemicals (3%).

Compliance costs are forecast to increase by 13% and rates by 10%.

The cost of growing quality wine grapes is predicted to increase vineyard working expenses in the future, especially the cost of sourcing scarce resources such as water for irrigation.

Net Result

A cash vineyard surplus of \$223,000, or \$7,950/ha, is predicted for 2006. This lift in surplus results from the yield improvement mentioned earlier.

Capital purchases are expected to fall in 2006, while development expenditure is expected to rise as growers replant parts of their vineyards. Marlborough growers have commented that the price of new vines is coming down due to decreasing competition among vineyards buying new plants. The underlying value of developed vineyards is strong, which is reflected in the model's opening land and building valuation of \$186,000/ha in 2006.

Marlborough Viticulture Budget

	2005 \$			2006f \$		
	Whole Vineyard	per planted ha	per tonne gross	Whole vineyard	per planted ha	per tonne gross
Revenue						
Income from grapes (current)	475,097	16,871	2,182.86	544,126	19,385	2,131.89
Other orchard income	17,874	635	82.12	11,906	424	46.65
Gross vineyard revenue	492,971	17,506	2,264.98	556,032	19,809	2,178.53
Cash vineyard expenditure	261,669	9,292	1,202.25	265,761	9,468	1,041.25
Interest	62,066	2,204	285.17	61,927	2,206	242.63
Rent and/or lease	5,194	184	23.86	5,252	187	20.58
Cash vineyard surplus	164,042	5,825	753.70	223,092	7,948	874.08
Depreciation	25,482	905	117.08	24,625	877	96.48
Net trading profit	138,560	4,920	636.62	198,467	7,070	777.60
Taxation	34,690	1,232	159.39	48,318	1,721	189.31
Net trading profit after tax	103,870	3,689	477.24	150,149	5,349	588.29
Allocation of Funds						
Add back depreciation	25,482	905	117.08	24,625	877	96.48
Drawings	48,888	1,736	224.62	52,286	1,863	204.86
Principal repayments	17,260	613	79.30	16,944	604	66.39
Development	20,490	728	94.14	42,222	1,504	164.43
Capital purchases	27,598	980	126.80	9,833	350	38.53
Disposable surplus/deficit	15,116	537	69.45	53,489	1,906	209.57
Other Cash Sources						
New borrowing	5,173	184	23.77	0	0	0.00
Off-orchard income	4,574	162	21.02	3,889	139	15.24
Other cash income	1,973	70	9.07	7,739	276	30.32
Net cash change	26,836	953	123.30	65,117	2,320	255.13
Assets and Liabilities						
Land and building (opening)	4,593,747	163,130	21,106.25	5,212,722	185,704	20,423.44
Plant and machinery (opening)	120,651	4,284	554.34	125,618	4,475	492.17
Total vineyard capital	4,714,398	167,415	21,660.59	5,338,340	190,180	20,915.61
Total debt opening	925,815	32,877	4,253.71	905,996	32,276	3,549.69
Equity (vineyard assets-liabilities)	3,788,583	134,538	17,406.88	4,432,344	157,903	17,365.92

Marlborough Viticulture Budget

	2005 \$			2006f \$		
	Whole vineyard	per planted ha	per tonne gross	Whole vineyard	per planted ha	per tonne gross
Vineyard Working Expenses						
Wages						
Pruning and tying down	59,046	2,097	271.29	63,422	2,259	248.49
Tucking and shoot thinning	30,849	1,095	141.74	31,407	1,119	123.05
Bunch thinning and leaf plucking	25,243	896	115.98	24,735	881	96.91
Hand harvesting	5,673	201	26.06	6,047	215	23.69
Other	19,791	703	90.93	15,386	548	60.28
ACC	1,762	63	8.10	1,962	70	7.69
	142,364	5,056	654.10	142,959	5,093	560.11
Operating Costs						
Spray and chemicals	25,967	922	119.31	26,665	950	104.47
Contract spraying	1,139	40	5.23	1,139	41	4.46
Contract machine work	1,992	71	9.15	2,243	80	8.79
Machine harvesting	17,423	619	80.05	17,955	640	70.35
Fertiliser	8,667	308	39.82	8,744	312	34.26
Electricity	4,766	169	21.90	5,100	182	19.98
Sundry expenses	6,137	218	28.20	5,916	211	23.18
Vehicles	7,397	263	33.99	7,594	271	29.75
Repairs and maintenance	15,322	544	70.40	14,704	524	57.61
	88,810	3,154	408.04	90,060	3,208	352.86
Administration and Property Expenses						
Communication	2,204	78	10.13	2,254	80	8.83
Levies and subscriptions	3,701	131	17.00	4,166	148	16.32
Rates	8,207	291	37.71	8,960	319	35.11
Accountancy, consultancy, legal	4,628	164	21.26	4,803	171	18.82
General insurance	3,328	118	15.29	3,679	131	14.41
Crop insurance	0	0	0.00	0	0	0.00
Other	8,427	299	38.72	8,880	316	34.79
	30,495	1,083	140.11	32,742	1,166	128.28
Cash orchard expenditure	261,669	9,292	1,202.25	265,761	9,468	1,041.25
Calculated Ratios						
Economic vineyard surplus (or EBIT)	130,820	4,646	601.06	190,646	6,792	746.95
Cash vineyard expenditure/GVR	53%			48%		
EVS/total vineyard capital	2.8%			3.6%		
EVS less interest & lease/equity	1.7%			2.8%		
Interest+rent+lease/GVR	13.6%			12.1%		
EVS/GVR	26.5%			34.3%		
Economic orchard surplus (EVS) is calculated as follows:						
Gross revenue-cash vineyard expenditure-depreciation-wages of management.						
Wages of management = \$31,000 + 1% of opening total vineyard capital to a maximum of \$75,000						

Marlborough Viticulture Production and Income Details

	2005						
	Area (ha)	Production Per Hectare (t/ha)	Total Production (tonnes)	Gross Yield %	Brix Level (Brix)	Return (\$/tonne)	Revenue (\$)
Variety							
Chardonnay - all other clones	1.4	9.8	13.8	6	22.8	1,770	24,426
Chardonnay - Mendoza & Clone 15	2.3	7.5	16.9	8	23.7	1,947	32,897
Other white	0.6	5.7	3.2	1	23.9	2,129	6,835
Pinot Noir – sparkling	0.6	11.9	6.7	3	19.3	1,129	7,567
Pinot Noir - still table	3.1	3.7	11.5	5	24.3	3,261	37,375
Riesling	1.1	11.0	12.4	6	22.3	1,758	21,782
Sauvignon Blanc	19.1	8.0	153.2	70	22.8	2,247	344,219
Total area available for grapes	28.2	7.7	217.6	100		2,183	475,097

	2006f						
	Area (ha)	Production Per Hectare (t/ha)	Total Production (tonnes)	Gross Yield %	Brix Level (Brix)	Return (\$/tonne)	Revenue (\$)
Variety							
Chardonnay - all other clones	1.1	10.5	11.8	5	22.6	1,716	20,252
Chardonnay - Mendoza & Clone 15	2.2	7.5	16.9	7	23.2	1,877	31,646
Other white	0.8	8.4	7.1	3	24.1	2,331	16,506
Pinot Noir – sparkling	0.6	14.3	8.0	3	20.0	1,100	8,840
Pinot Noir - still table	3.1	5.5	17.0	7	24.0	3,064	52,090
Riesling	1.1	11.5	12.9	5	21.9	1,812	23,422
Sauvignon Blanc	19.1	9.5	181.5	71	22.5	2,156	391,370
Total area available for grapes	28.1	9.1	255.2	100		2,132	544,126

Issues and Trends

For many growers, confidence in vineyard profitability in the short term has fallen, as downward price pressure becomes a reality. This pressure on grape prices, combined with increasing costs of production, and increasing demand from markets and wineries to produce quality wine, will continue to drive the reduction in vineyard profitability over the next few years. Consolidation in operations is likely to continue, along with the exit of smaller and less efficient players from the industry.

Vineyard profitability is also under pressure as a result of the high cost of redevelopment and replanting undertaken by many growers this year. Not only is vineyard income lost for several seasons while new plantings mature, but the burden of additional development costs is also eroding the vineyard's bottom line.

Growers are realising the need to produce high quality grapes and also the importance of site selection. Bulk varieties are generally not viewed as an economic option and are being replaced by premium varieties grown for quality wines.

Quality is an issue that the industry is focused on at present. New Zealand wines are competing in premium markets, so maintaining quality, and thus price, is essential for success. A loss of quality will force New Zealand wines to become commodity items competing only on price, leading to further reductions in grower returns.

“Cowboy” operators investing in the industry to make a quick profit, with no expertise in wine growing, are a perceived threat to existing growers. Growers of Marlborough Sauvignon Blanc in particular are concerned that their reputation of producing quality wine may be compromised by these operators.

Another major issue for the industry is the dramatic increase in supply, and the ability of New Zealand to profitably market and sell this increasing production. The industry was especially nervous after the record vintage of 2004, as they were faced with the challenge of moving the millions of litres produced.

Despite the unfavourable exchange rate in recent times, New Zealand wine industry export volumes increased almost 60% in the nine months to April 2005, to just less than 50 million litres. The United Kingdom, United States and Australia still dominate export markets, accounting for around 85% of New Zealand wine exports by volume. However, Canada and Germany are becoming increasingly important as export destinations for New Zealand wine.

Sauvignon Blanc is still our major export variety, accounting for around 71% of the total volume exported for the nine months to April 2005. In this period, the varieties with increased export volumes included Sauvignon Blanc, Pinot Noir, Cabernet/Merlot and blends, Pinot Gris and sparkling wines.

The average export selling price has weakened due to the strong New Zealand dollar. Export values declined to a low of \$7.80/litre in February 2005. However, the moving annual average to February 2005 is a more realistic figure to use, at \$8.91/litre. This is down from \$9.73/litre in June 2004 and \$10.39/litre in June 2003.

Long term, a perceived threat to the contract grower is production from winery-owned vineyards. The number of growers is declining, and some are worried that contract growers may become redundant in the future. Smaller growers are aware of the need to achieve economies of scale and some are considering exiting the industry while land prices are high.

Growers are working to manage risk. Frost protection is a case in point. A number of frost protection machines have been installed in recent years to protect vineyard revenue. However, along with other land-based industries, the wine industry is at the mercy of the climate, as can be seen from the impact of a frosty spring in 2002.

Irrigation systems are commonly being installed in Marlborough to counter grape quality problems arising from inevitable dry seasons. This surge in demand for irrigation has led to the development of new irrigation schemes, including the Blind River and Southern Valley irrigation schemes. It has also led to research on more efficient ways of managing irrigation systems in the vineyard. There is a MAF Sustainable Farming Fund (SFF) project specifically looking at how to better assess and manage grape irrigation requirements. Another SFF project has “focus vineyards” established in both Marlborough and Hawke’s Bay, assessing vine water requirements. Some growers think water scarcity will lead to the trading of water rights in the future, similar to the situation in Australia.

Vineyard decline is another limitation to vineyard performance that needs to be addressed, particularly leaf-roll virus and wood disease in older vineyards.

Labour availability is an increasing problem, especially in Marlborough, where the scarcity of skilled and unskilled labour is driving up wages. Hawke’s Bay has a larger supply of unskilled labour as it supports a more diverse horticultural sector. However, Marlborough is more isolated in terms of attracting seasonal labour and has a heavy reliance on contractors.

Process and Fresh Vegetables

This commentary covers the production, profitability and trends and issues for process and fresh vegetable growers over the entire country, selling their produce either locally or on the export market. The report is an amalgamation of the previous South Auckland/Waikato Commercial Vegetable, Lower North Island Process and Fresh Vegetable, and Canterbury Process and Fresh Vegetable reports.

The commentary covers the growing season from July 2004 to June 2005.

Key Points

- Cool spring conditions affected the yields and quality of many crops.
- Most vegetable growers have suffered reduced incomes and increased costs over the year.
- Onion growers suffered another poor year, with low yields, low prices and higher costs.
- Labour availability is a serious issue, with some growers losing crops as a result of labour shortages.
- Grower numbers have declined by 30% in the past five years.
- The proposed carbon tax will severely impact on vegetable growing.

Physical Factors

Climate

In Pukekohe, the year was colder and drier than average. December 2004 temperatures were 2.1°C below the December long term average. In the year to March 2005, the monthly average temperature only climbed above the long-term average for the last two months. While winter and spring were cold and dull, which slowed growth and delayed crops by three to four weeks, the season has been described by growers as having exceptionally good growing conditions. The annual rainfall was also extremely low, recording a total of 891 mm (66%) of the 1,345 mm average. May and December were the only months that experienced rainfall above the long-term monthly average.

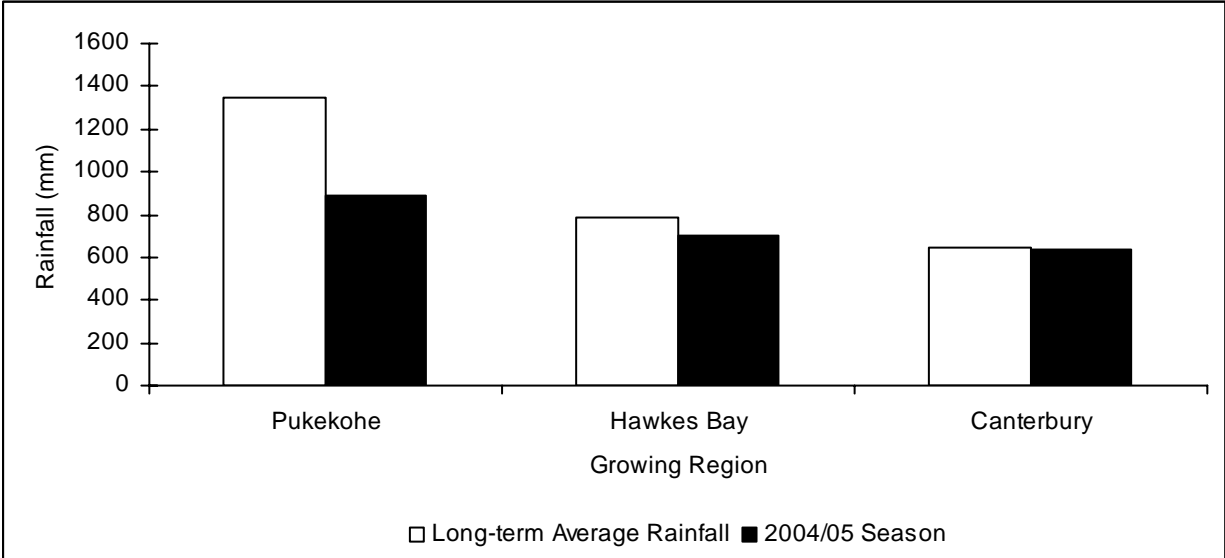
In Gisborne, the growing season has only been average. The spring and early summer temperatures were cooler than normal, slowing plant growth and resulting in delayed maturity and reduced yields in most crops. Drier, warmer weather after Christmas reduced yields in later planted crops.

In Hawke's Bay, rainfall for the year was 90% of average at 704 mm and, significantly, rainfall in spring was only 56% of average. Average mean temperatures for Hawke's Bay were down 1.4°C, with spring temperatures being 2°C cooler than long-term averages.

The Canterbury growing season was good, with a moderately dry winter, followed by good rain in August, average rainfall until November, which was dry, then good rain in December. The summer/autumn was drier than normal, with below average rainfall in all months other than March. While annual rainfall for Lincoln (May-April) was 634 mm (98% of average), the autumn rainfall of 151 mm was 71% of average. Of greater significance was that the air temperatures were cooler than normal until December. This had a beneficial effect on the establishment and growth of crops, but delayed harvest or reduced yields in both indoor and outdoor crops.

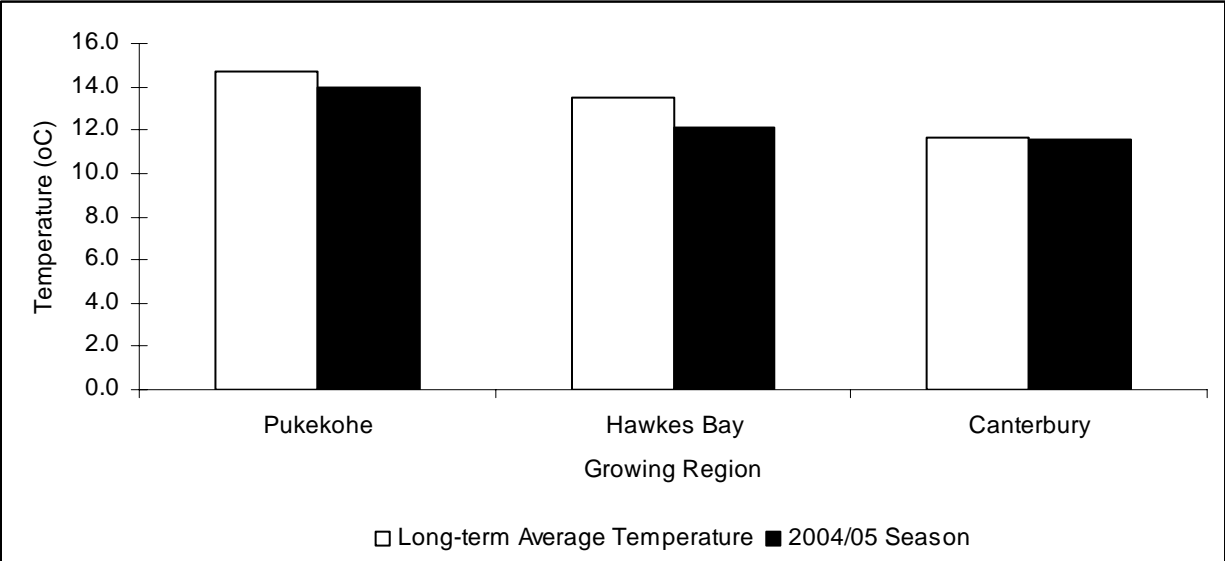
Graph 1 provides a comparison of the rainfall in three major vegetable growing regions over the season compared with the long-term average.

Graph 1: Comparison of Rainfall for the 2004/05 Growing Season with Long-term Averages in Three Growing Regions



Graph 2 provides a similar comparison of mean temperatures recorded for these three growing regions over the season.

Graph 2: Comparison of Mean Monthly Temperatures for the 2004/05 Growing Season with Long-term Averages for Three Growing Regions



As well as temperatures being colder than average, some districts experienced hail. In Pukekohe, this was patchy across the district and was particularly bad in Patumahoe, Karaka and Wai Pa. In South Canterbury, there was a hail storm prior to Christmas that affected process peas and potatoes, while in Christchurch, there was a hail storm in April that affected green crops in a swathe to the north of the city. The effect of hail on individual growers was severe, but overall it had minimal regional or industry impact.

The less extreme conditions meant that growers were generally able to maintain soil moisture levels in crops, unlike the previous season, when evaporation and temperature were extreme and rainfall low in December. Many pea crops in Hawke’s Bay received only one irrigation before harvest in December. A number of pea crops in Canterbury did not need irrigating at all during the season.

Production

Potatoes

It is estimated that there were 11,717 hectares (ha) of potatoes planted in New Zealand in the year ended December 2004. This is similar (2% up) to the area planted the previous season. There is an increasing trend away from the all-purpose potato varieties to growing varieties that are specifically suited to the crisping, fries or table market. This, in part, has been driven by processors being more specific about the quality attributes they want. Indications are that the area grown in all-purpose varieties like Ilam Hardy and Rua have declined, while the area planted in specific roasting varieties like Agria has increased. Another driver for this change has been more specific marketing of potatoes to the consumer, based on end use. The colour coding of bags according to the end use is now common.

In Canterbury, the cool growing conditions in spring led to the early potato plantings being harvested around the same time as the main crop varieties. Overall conditions for potato production favoured good tuber initiation and growth. The drier conditions in summer and autumn reduced disease and Canterbury growers achieved good yields (25 tonnes/ha (t/ha) for seed potatoes, 45 t/ha for tables, and 65 t/ha for processing). The high exchange rate limited export opportunities in 2004/05.

In Pukekohe, there has been very little sign of blight apart from a small amount towards the end of the season. Tuber moth and the potato virus were less of a problem than last season due to generally good quality seed potatoes. In some instances, yields have been 20-30% up. On average, Pukekohe growers produced good yields of 50 t/ha for process lines and 40 t/ha for fresh potatoes.

Hawke's Bay producers had a very good growing season, with crops not suffering unduly from the cooler spring. Average yields were approximately 45 t/ha, with the best achieving over 70 t/ha. In the Manawatu, potato growers seem to have rebounded well from the floods, with good production this year.

With lower rainfall and better growing strategies, fertiliser inputs have been reduced across many crops. More emphasis has been placed on tailoring fertiliser strategies to individual paddock requirements.

The volume of potatoes exported from New Zealand to the year ended March 2005 was down (3%) on those exported in the previous year, with 84,591 tonne being exported, including process lines and seed potatoes. The value of these exports was down a similar amount, to a total of \$68 million. The volume of processed potatoes accounts for almost 70% of all potato exports.

Onions

It is estimated that 4,993 ha of onions were planted in the year ended December 2004, down 9% from the previous year and caused by low confidence in market returns for onions. A further 20% reduction for the period ending December 2005 is expected as poor market returns continue. While some growers may substitute potatoes for onions, and others have noticed a glut of greens, large areas simply will not be planted as growers do not have the finance to establish the crop. However, the talk of less area being planted may induce some to give it another try.

In Pukekohe, many onion growers had good to excellent yields, but financial returns have been disastrous. Hail damage caused some crops to be written off and hoed back into the ground. Much of the onion crop, particularly the hybrids, had between 20 and 60% losses due to pipers (seed heads). This was attributed to cold dull December conditions coming at the time in the growing cycle which triggers this reaction. The losses were very dependent on planting date. Two onion crops planted alongside each other, but three weeks apart, suffered 50% and 5% losses respectively.

Hawke's Bay had a generally good season for onion growing. Onions seeded in May and June were already well established when the cooler spring conditions prevailed. Early crops were lifted and harvested prior to the heavy rainfall in March, but later crops were affected and suffered from water staining. Finding good quality land with no compaction for successful onion growing is an ongoing issue for Hawke's Bay growers. The district has no white rot present, unlike the Auckland area.

Intense pressure from the onion thrip does pose a lot of problems for those growers who would like to follow integrated pest management programmes using “softer” chemicals.

A number of growers who had planted onions in the Hawke’s Bay the previous season did not plant them this season, and instead planted alternative crops.

In Canterbury the area in onions has been reducing due to poor export returns, the high cost of weed and pest control, and harvesting and grading costs.

Overall, onion growers yielded an average of 40 t/ha. This is 20% down on last year, largely due to the piping.

Thrips were generally well controlled and the onions had good skins. Despite this, there have been problems with the insect pest being found on consignments exported to Europe. Research is needed to identify just where the thrip contamination is occurring. The crop appears to be free of thrips just prior to harvest, but is found to be infested when inspected on arrival. Speculation about the cause of the problem includes thrips not being identified at packing, cross contamination within the boat, and the boat’s refrigeration possibly being turned off. Bins are now being transported with temperature loggers, although results from last year were inconclusive.

Onion growers are currently involved in a three-year MAF Sustainable Farming Fund project investigating integrated pest management (IPM) strategies. There are 12 areas that are being investigated as known gaps in IPM knowledge.

The volume of onions exported to the year ended March 2005 was 9% down on the previous year, while the value of these exports was reduced by 27% from \$97 million in the year ended March 2004 to \$72 million to the year ended March 2005.

It was an extremely bad year for most onion growers, with the better than average performance of potatoes being the only reason most will survive financially.

Squash

A total of 8,125 ha of squash was planted in the year ended December 2004. This is up 1% on the area planted in the previous year. Regionally, there was a slight decrease in the area planted in the South Auckland, Waikato and Bay of Plenty and a slight increase in the area planted in Gisborne. A record area of 3,024 ha was planted in Hawke’s Bay by only 30 growers, compared with 45 growers in Hawke’s Bay five years ago. For the first time in a number of years, some squash was planted in the Canterbury region by two growers.

The number of growers has reduced again with only 110 growers registered (19% down on last year) with the New Zealand Kabocha Council, formerly the NZ Buttercup Squash Council. Smaller growers who do not have an investment in a packhouse seem to be leaving the industry.

The weather pattern over the production season was not ideal for squash. A lot of crops early in the season produced small fruit, thus limiting yields, and abrasion from high winds in spring caused skin damage. Later crops suffered from the drier than normal conditions in January and February. In Hawke’s Bay, squash growers had a below average season. The cool spring and early summer conditions mean that crops were light and slow to mature. The average yield across all varieties was 13 t/ha. This is similar to the production achieved last year. The cooler growing conditions in Canterbury led to yields lower than those reported elsewhere.

Powdery mildew was not as significant a problem as it was the previous season. Growers learned from the past and employed better crop husbandry techniques to control the disease.

At the time of writing, a total of 93,400 tonne of squash had been exported from New Zealand, similar to volumes of exports during the 2002/03 season. The export season is not quite complete. Exports to Japan account for 89% of the product exported, with the balance of the product going into Korea and the United States.

Greens

Greens have had a variable growing season as varieties planted have performed poorly under the unusual weather conditions. Weather conditions have also impacted on the prices some growers have achieved for their green crops. Lettuce prices were good in May, July and August due to the cool, dry weather. Prices remained strong in September when Gisborne was badly affected by frost, and although Pukekohe also suffered some frost damage to the outer leaves, the hearts remained good. There was hail damage in Pukekohe in Christmas week which resulted, in some cases, in the loss of the entire crop. Prices fell from Labour Weekend (late October) and only started to firm again with the Easter cold snap.

There were no standout pest and disease pressures over the last 12 months. Nationally, there was a high incidence of the looper caterpillar for three weeks prior to Easter, which had a large impact on lettuce due to zero tolerance for this pest. There was a little downy mildew in winter. The lettuce aphid was present this year, but growers are confident that they have it under control either with the use of Confidor® or aphid-free lettuce varieties.

White blister in brassicas, caused by the fungal pathogen *Albugo candida*, was recently discovered in Canterbury. White blister has caused severe problems in broccoli and cauliflower crops in Australia, possibly because a new strain of *A. candida* has developed. All growers have been sent a fact sheet as the industry tries to determine how widespread the fungal disease is.

A large Gisborne grower has diversified by planting green crops in Canterbury. Reasons include spreading climatic risk, accessing cheaper lease land, and reducing freight costs for product destined for the South Island.

Asparagus

The area in asparagus in New Zealand has dropped back to approximately 1,350 ha, a reduction of 50 ha, or 4%, on the previous season. However, it is thought that the previous area was underestimated and the area removed is actually greater than this. In the Waikato, the drop is probably due to ageing beds coming to the end of their economic life. In the Manawatu, the fall is due to last year's extremely wet conditions, and in Hawke's Bay is due to replacement with grape vines. There has been small expansion in the Canterbury area. It is thought that the area in asparagus will now stabilise.

Cool spring conditions led to a slow start to the asparagus harvest in many growing regions. For growers remaining in the Waikato, yields were generally lower (10%) than the previous season. Overall, these growers estimate that they produced 5 t/ha. This increase on the yield reported last year is due to poorer performing areas being removed from production, lifting the average. Hawke's Bay growers had another below average season, the third in succession. Lower than usual spring temperatures affected the normal flush of growth. Yields were down by approximately 10% on average. With a dry spring, the problems caused by phytophthora root rot did not occur. Growers in the Manawatu suffered a 20-50% reduction in yields due to the cool spring and the carry-over affects of the February 2004 floods impacting on the stored carbohydrate in the asparagus crowns. The main crop of asparagus relies on the carbohydrate stored in the previous summer for production in spring. Asparagus yields in Canterbury were close to expectations, but down on normal yields.

Carrots

Ohakune had a late start to the season, which increased the prices a little for South Auckland grown carrots. The season was reasonable, with moderate disease pressure.

Export volumes of carrots were down (33%) in the year to March 2005 dropping from 21,393 tonne to 14,283 t. The value of these exports dropped even more significantly (40%) from \$14.4 million in the year ending March 2004 to \$8.6 million to March 2005. Much of the drop in export volumes has occurred as a result of competition from Chinese carrots in the Thailand market. The removal of the tariff on carrot exports to Thailand should improve export volumes, as New Zealand grown carrots are reportedly preferred over Chinese carrots because of their better flavour.

Process Crops

Gisborne tomato growers had a disappointing year, with yields down approximately 20%, to an average 84 t/ha. The drier weather in January and February improved colour and brix levels. Yields were also down in Hawke's Bay as a result of the cool spring, which affected plant development and fruit set. Average yields were approximately 78 t/ha, which is about 10% below district long-term averages, and well down on the previous year's average of 100 t/ha.

It was only an average season for Gisborne sweetcorn growers. The cool, early summer conditions meant that cobs did not fill out well and crop maturity was delayed. Processing did not commence until the 20 January, a week later than normal. The dry period between Christmas and mid-March made for ideal harvesting conditions. Average yields were 17 t/ha for supersweet and 20.5 t/ha for sugary varieties. In Hawke's Bay, following last season's below average yields, sweetcorn crops yielded in line with the five-year average. Supersweet varieties averaged 20.5 t/ha and the sugary varieties 21.5 t/ha. In Canterbury, sweetcorn yields were down, but still better than last year, when hot conditions damaged crops over the New Year. Some crops in Hawke's Bay were by-passed (10-15%) due to crop scheduling problems caused by the cool early spring, which resulted in a lot of crops ripening at the same time. Growers are still paid for these crops based on an average price but a lower than average yield, so they are considerably worse off because of this.

Organic sweetcorn growers had a more difficult season as a lot of their crops were affected by the very cool December.

In Hawke's Bay, pea growers had a good season, with record yields averaging 6.5 t/ha. Four hundred hectares, or 25% of the total area, is grown using the no-till technology developed in association with LandWISE. Developments in this technology are ongoing and it is likely that more growers will use either no-till or minimum-till techniques in the future. In trials over the last two years these techniques have produced similar yields compared with conventional techniques. The big advantage of the new techniques is the preservation of soil structure and a reduction of cultivation costs of \$200/ha.

In the South Island, pea processing was slow due to cool conditions, with harvesting being up to 14 days late. Downy mildew was a problem in South Canterbury, while some crops were by-passed due to hot conditions in February. Yields were about average (6 t/ha). Snap bean yields were good, considering the cooler conditions and lack of heat units. Broad beans are harvested about November and yields were good, due to stable weather conditions.

Carrot harvesting (mainly for dicing) starts in early May. Indications are that yields will be up in Canterbury with better establishment, due to the lack of north-west winds. However, there has been a higher incidence of bolters than usual, caused by cool conditions in December.

Covered Crops

The greenhouse tomato industry is dominated by a few large operations, of which 17 are now a hectare or more. Four operations control 42% of the area. The median greenhouse size is just 2,400 m². Average tomato yields are 45 kg/m², up almost 10 kg/m² (29%) in 10 years.

December was a particularly difficult month, with cold temperatures and low light levels. Fungal problems were common and consumer demand dropped, which was reflected in lower prices.

On the production side, whitefly was a problem, as was splitting and crazing caused by high humidity and some growers switching their heating off too soon. High temperatures in January and February also adversely affected fruit quality.

There has been a significant increase in the production of truss tomatoes over the last year, with one wholesaler reporting a 1,000% increase in sales.

Financial Factors

Revenue

Generally, the prices growers have received for their vegetables have been low. Statistics show that over the past 22 months, vegetable prices have fallen behind overall food prices, except for the three months following the floods in the Manawatu in February 2004, when prices for some vegetables spiked due to a shortage of supply.

Growers who are not aligned to supermarkets (i.e. using the auction or produce resellers) are likely to be having a tight financial time due to high production and only moderate demand, and therefore depressed prices. Vegetables were generally suffering from over-supply and low prices over the year.

Potatoes

Between November and mid-February, export and domestic fresh potatoes were receiving very good prices. Even process prices rose when processors were short of product and had to top up contracted supplies. Prices at times exceeded \$500/tonne for washed potatoes and \$300-\$400/tonne for fresh bagged and processed potatoes. While prices were good earlier on, larger yields and therefore higher volumes hit the market in late March, deflating prices. Many of the smaller operations have poor storage facilities and often no cool storage so they cannot hold produce back. For the season, potato prices averaged \$285/tonne, which is the same price growers received in the previous season.

Onions

Onion growers have received very low prices this year on the back of several years of poor returns. The average price a grower received this season was between \$200 and \$225/tonne. This is significantly down (33%) on the price received last year as a result of a high amount of produce carried over from the previous growing season, the high exchange rate, increased freight rates and low commodity prices in major markets for onions.

The United Kingdom (UK) had a good carry-over of onions that stored well. Prices were therefore low when New Zealand onions entered the market and never climbed. Chile continues to export more of its crop to the UK and they can do so without any tariffs. Prices in Europe are half the cost of production at \$3.00/20 kg bag for new season's onions. For the coming season, Europe is again predicted to have a large onion crop, as has the United States. In addition, increased production from South Africa, Chile and Argentina will compete for the same window of opportunity in Northern Hemisphere markets that New Zealand has had for the last 10 years. This window has dropped from three to four months 10 years ago, to about three weeks or less at present.

Onions produced in Canterbury came onto the market too late for the South East Asian market due to competition from China at that time of the season, and over-production in the Northern Hemisphere. Some growers are leaving some crops unharvested. Next season will see a reduction of 20% in the area harvested in Canterbury.

The Japanese purchased jumbo onions this year, at around \$5.00/20kg bag, although this remains a very erratic market.

Squash

Squash prices varied greatly throughout the season. Some very early crops received over 80 c/kg while in February, the spot price reduced to as little as 10 c/kg. Most growers grow on contract, which provides for a maximum and minimum price. When the spot price falls below the minimum price, the New Zealand exporter makes up the difference between the two. Average prices paid for squash were similar to last year, with a return of approximately 40 c/kg.

Greens

The downward pressure on the price that the grower receives seems to be driven, in some cases, by retailers using produce as a customer draw card, or a loss leader. This seems to be particularly apparent in lettuce, cauliflower and broccoli lines.

The summer lettuce price was lower than last year, with a drop from \$9.00 to \$8.00/crate this year.

Winter prices were very good for Pukekohe growers as a result of frosts in Gisborne. Growers received over \$20/crate in May, July and August for lettuce. While Pukekohe also suffered frosts, these were not as severe and those growers who had product were able to capitalise on these prices.

Following the disastrous onion season, a number of growers will look to recover some lost income by planting green crops. This may further depress prices for greens. While many growers are talking about a reduced area of onions, this will not become clear until after planting.

Cauliflowers received \$10/crate on average for the year (17% up on last season's average of \$8.50/crate). Broccoli growers received prices of \$16.50/crate, just under (2%) the price received in the previous season.

Asparagus

Returns for asparagus growers were similar to the previous season, with growers receiving approximately \$2.30/kg for fresh product. Again, there was a significant variation in return between post-harvest providers with, in one case, a 65 c margin paid to growers supplying one facility compared with their fellow growers. Process product received prices similar to the previous season of around \$2.00/kg.

Carrots

Carrot growers received, on average, \$360/tonne for their produce. This is similar to the price paid last season.

Process Crops

Recent seasons have produced reasonable yields on most process vegetable crops. However, considerable pressure has been brought to bear on growers, particularly for peas, carrots and beans, with significant reductions in areas planted and reduced prices. There is also price pressure on process potato growers. While it appears there have been increasing free-on-board returns for our major process vegetable products, returns to growers have reflected the fact that much of the product is still commodity trading, and there is a definite relationship between price and volume.

Prices paid by a major Gisborne processor for sweetcorn fell by approximately 8% to an average of \$148/tonne. The price decrease was in part due to the excellent tonnage grown the previous season, some of which was unsold at the start of the cropping season. The high value of the NZD and a general increase in freight rates have also squeezed exporters' margins. Overall, growers received approximately \$150/tonne for their sweetcorn this season.

Process tomato prices paid were on a par with last season, at approximately \$100/tonne. The excellent brix levels (a measure of sweetness) this season have helped improve the returns as growers are paid on a combination of tonnage and brix level.

The high exchange rate is causing serious problems for processors who are exporting to the Pacific Rim (Australia, Asia, Japan). Processors have held prices to growers, but indications are that payouts will be lower in the new season, and that areas will also be reduced. Australian pea producers are complaining that New Zealand peas are displacing them from the Australian market.

Covered Crops

Greenhouse tomato growers' profitability continues to decline. Last winter, increased Australian imports selling at low prices placed a ceiling on domestic market returns. Returns to growers remained poor throughout the fickle summer of 2004/05 with demand not quite keeping up with production, made worse by increasing fuel and power costs. Too much poor quality fruit is being graded and marketed and there are some unreal expectations amongst growers of where tomato pricing should be during summer.

From January onwards the summer was reasonably good, with warm dry conditions that lifted customer demand, although prices were extremely low, leading to overall poor returns. The 2003/04 summer had unusually good prices, which is probably the reason for the abundance of tomatoes in the 2004/05 summer.

While tomato prices are average for late autumn, they are expected to lift slightly through winter, although this will be determined by the amount of imported product.

Expenditure

Expenditure on some items such as chemicals and fertiliser has reduced for vegetable growers due to the high value of the NZD, improved production techniques and more competition in the retail sector. In Canterbury, fertiliser inputs were generally down this year as growers are becoming increasingly more sophisticated at tailoring the fertiliser mix to the individual paddock and, as a result, reducing overall inputs. In Pukekohe, the lower rainfall and better growing strategies have meant that fertiliser inputs have been reduced across many crops. Chemical prices are projected to rise this year, due to increases in the cost of raw materials and transport.

Overall, expenditure has increased because of higher electricity, fuel and labour costs. Increases in fuel prices have added to production costs, particularly for those larger Pukekohe operations that have production south of the Bombay Hills, and who rely heavily on transport by road. Rail freight costs have gone up 30% in 12 months and there has been a 20% increase in shipping costs. An example of increased transport is the cost of trucking a pallet of vegetables from Pukekohe to central Auckland, which rose from \$20 to \$25.

Currently growers are paying \$18-\$20/hour for key staff and \$10-\$12 for unskilled staff. It is predicted that wage rates for the unskilled staff will go to \$12-\$15 this year, and for anyone with some skills, to be in excess of \$20/hour. There is strong competition for labour from other sectors, particularly from the construction industry.

For Canterbury growers, cool conditions in December increased the costs of glasshouse heating, but some savings were made in February when temperatures were higher. Rising fuel costs, plus the impending carbon tax set for introduction in April 2007, is a major concern of growers.

Confidence remains relatively high amongst capsicum growers. Another large area of greenhouse (10 ha) is planned for growing capsicums destined for export.

Net Result

The gross margins for the various vegetable crops provide an indication of an average farm gate return per hectare for the season. The gross margin considers the revenue for a particular crop less all the direct cost associated with growing that crop. The figure does not consider overheads such as administration, debt servicing, taxation or drawings. The actual result for an individual grower may be quite different to this due to individual circumstances.

The net result for many vegetable growers for 2004/05 is a reduced gross margin in the crops that they have produced. This reduction in net result is largely as a result of reduced product prices and higher production costs. The exceptions to this are the increase in the asparagus, cauliflower and process potato gross margins, and the unchanged squash gross margin.

The yield for asparagus, though slightly down for many growers, is, on an industry basis, higher than used in the previous season as many poor performing blocks have been removed as they have come to the end of their economic life. Growers in the Waikato achieved a gross margin of \$2,510/ha. This will be higher than those growers in the lower North Island who focus more on producing for the lower priced process market, and whose yields have been affected by the floods in February 2004.

The cauliflower gross margin has doubled to \$3,871/ha, due to a significant increase in prices received for the product.

The process potato gross margin increased as a result of better yields and lower growing costs.

Most significant in terms of net result is the negative gross margin for onion growers. A combination of poor product prices and higher production costs has meant that onion growers are generating a gross margin, on average, of negative \$1,330/ha in Pukekohe and negative \$800/ha in Canterbury. The difference in these two results is due to higher expenditure on fungicides required to control white rot in northern areas.

Table 1 provides detail on the price per unit, yield per hectare and gross margin for various vegetable crops grown in New Zealand.

Table 1: Vegetable Gross Margins 2004/05

	Price (\$/tonne or vege crate)	Yield (tonne or vege crates/ ha)	Gross Margin (\$/ha)
South Auckland/Waikato			
Asparagus	2,300	5	2,510
Onions	218	40	-1,330
Potatoes – table	285	45	1,140
Greens			
- Cauliflower	10	1,734	3,870
- Broccoli	16.50	1,000	4,630
- Lettuce	8	3,544	4,330
Hawke's Bay/Gisborne			
Squash	400	13.0	970
Sweetcorn – process	150	17	1,050
Canterbury			
Peas – process	258	7	910
Potatoes – process	170	65	3,600
Onions	200	40	-800

Source: Fruition Horticulture, Agrilink, Agriculture New Zealand and Canterbury Agriculture

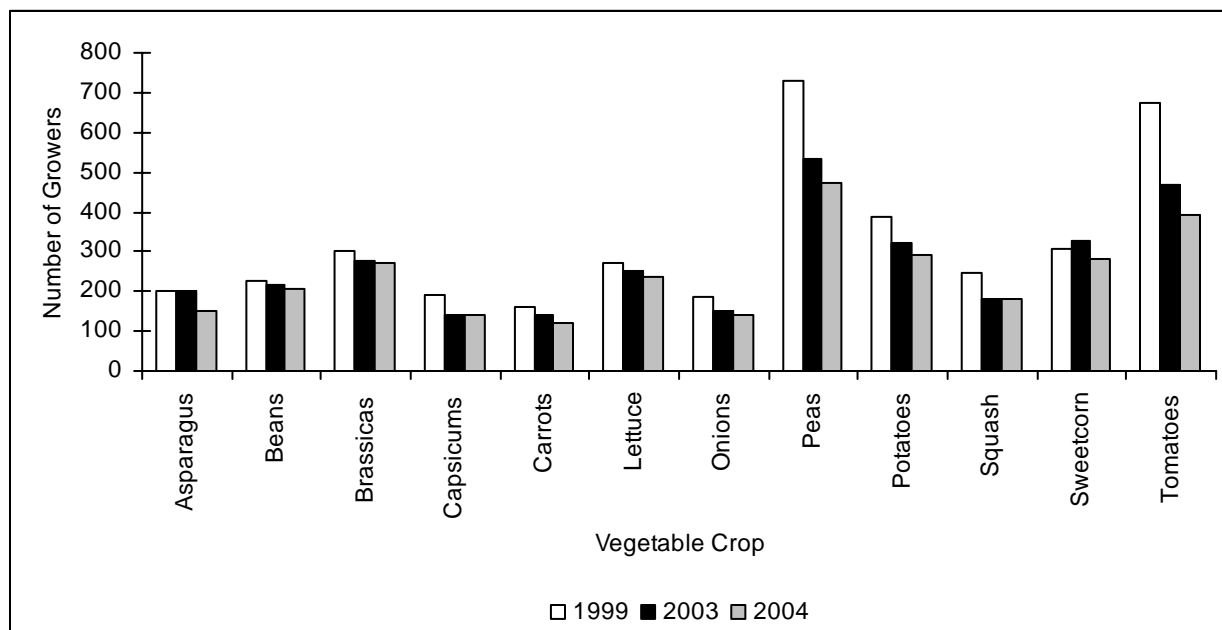
Issues and Trends

Horticulture New Zealand is in the process of being formally established. This organisation is the amalgamation of the former New Zealand Vegetable and Potato Growers' Federation, New Zealand Fruitgrowers' Federation and New Zealand Berryfruit Growers' Federation. These organisations have previously worked very closely together and it is anticipated few changes will be noticed as a result of the change.

The number of people growing vegetables in New Zealand continues to decline.

Five years ago, 5,000 vegetable growers were registered with VegFed. This has reduced by 30%, to 3,500 registered growers currently. The decline is a reflection of the reduced profitability in many crops leading to amalgamation, or due to growers simply exiting the industry. The trend with tighter margins will be for fewer growers of both covered and outdoor crops, with smaller growers dropping out of the system. It is expected that the level of production will remain about the same as present. Graph 3 provides a representation of the continued decline in grower numbers for most crops grown in New Zealand.

Graph 3: Number of Vegetable Growers 1999, 2003 and 2004



Source: NZ Horticultural Facts and Figures 2004, HortResearch

During the year, the greenhouse vegetable industry conducted a comprehensive survey. The results showed that Auckland dominates with 57% of the total area and 60% of the heated area. Glass is the most popular greenhouse structure, 76% of which is less than 10 years old. Over three-quarters (78%) of the protected vegetable greenhouse industry is less than 10 years old.

Natural gas is the main fuel source in Auckland (92%) and, consequently, represents just under half of the total New Zealand heated area (49%). Coal is the next most popular fuel source at 32% nationally, and is used in 94% of the South Island's heated greenhouse area.

No new potato material has been imported into New Zealand for approximately five years, due to the lack of suitable protocols or quarantine facilities. The only new plant material coming onto the market in New Zealand is material bred by Crop and Food Research, using New Zealand cultivars. There has been considerable debate over the last five years about the best approach for getting new breeding material into the country. Recently MAF announced plans to provide level three post-entry quarantine and diagnostic facilities. Some people within the industry have investigated getting facilities accredited offshore and then bringing the imported plant material through a level two facility in New Zealand, while others support the plan for New Zealand's own facilities.

A survey of consumer buying patterns has shown that the average household weekly spend on vegetables is \$10.30. The purchases are made up of \$8.00/week on fresh vegetables and \$2.30 on processed vegetables. The survey does not include purchases in restaurants or institutions. In nominal terms, this is an increase of 8% per household per week since the last survey conducted three years ago, but when it is adjusted for inflation, it actually shows a reduction of between 2 and 4%. However, the total annual expenditure on vegetables is up by 17% because of the increase in the number of households. Most of these purchases (72%) are made in supermarkets, with just under 20% being made at a traditional greengrocer.

Supermarkets continue to wield considerable power in New Zealand and in other developed countries. In the UK there is mounting pressure for statutory codes to curb supermarkets' power over their suppliers, including overseas suppliers, after the voluntary code was said to have failed. It is reported that the growers' share of the product price has dropped from 50% to 7.5% in 50 years in the UK.

The power of the supermarkets and their desire to deal with a small number of suppliers has led to a number of changes in the industry. There is a trend away from auction floor sales and towards use of brokers. Marketing groups have been created to develop economies of scale for the smaller grower in

terms of packaging and grading, and smaller growers are looking towards other markets such as farmers' markets to sell their produce directly to the consumer.

There is no longer a seasonal pattern to vegetable supply for most vegetables. The market place is demanding fresh vegetables all months of the year, and it is up to growers to produce out of season crops to satisfy demand. The trend is for the market to remain low throughout the year, without the highs that have allowed growers to generate sufficient returns for financial sustainability, so margins are being squeezed. Consumers ultimately benefit from better availability of lower priced vegetables, but the sustainability of such low margins is questionable.

Growers are optimistic about the impact of the recent Closer Economic Partnership with Thailand. The agreement sees the dropping of tariffs from 40% to 0% on a number of products being imported into Thailand from New Zealand. This reduction in tariffs will put New Zealand growers on a more equal footing with Chinese producers, who currently pay no tariff.

Some processors in both Hawke's Bay and Gisborne are further processing and "adding value" to squash that is rejected at packing time. Some is now being diced, frozen and exported as a finished product. Other product is dried outside in the sun and then further processed into squash powder. This is a key ingredient of prepared foods, soups and sauces.

Cedenco, the main processor in the Gisborne district, has expanded its facility to include a new \$1.8 million dry storage warehouse. They are also participating in the government-backed Major Regional Initiative, working to improve the productivity of Maori-owned land. Discussions are ongoing with a group of Maori landowners north of Ruatoria which could result in 300 ha of sweetcorn being grown for the company next season. The Wairoa area, midway between Hawke's Bay and Gisborne, is becoming an increasingly important cropping area. Sweetcorn is grown in the district both for McCain's in Hawke's Bay and Cedenco in Gisborne. The soils in the area have good structure, because they are generally part of a grass rotation on a farm, and hence crops yield very well. The companies like growing in different areas because it reduces the risk of losing a crop entirely.

A significant achievement for the vegetable industry was in gaining equivalence for their Fresh Produce Assured Supplier Programme against the EUREP GAP programme. This means that growers do not need to have two separate systems for domestic supply and exporting product into Europe.

Compliance costs continue to rise for vegetable growers. Smaller growers are leaving the industry. Some say they are fed up with the increased bureaucratic rules and regulations and market demands that face growers. Occupational Safety and Health regulations, Approved Supplier certification required for marketing to supermarkets, Holidays Act requirements and ever-increasing Accident Compensation Commission costs are just some of the issues that growers have to deal with. An example of these increasing compliance costs is one supermarket chain requiring bins to be stacked three high on a pallet, whereas previously it was four. While this is a small request, it adds additional costs to pallet handling, wrapping and administration.

The adoption of the \$15/tonne carbon tax will impact on growers through increased costs. All producers using fossil fuels for heating greenhouses, cultivation, harvesting, and freight to market will be affected. Growers are concerned that the carbon tax will give imported crops an advantage over New Zealand ones. It is estimated that the proposed tax may cost some large growers as much as an additional \$250,000/year in heating, transport and other costs. The government's policy package for industries that are competitiveness-at-risk as a result of the carbon tax includes Negotiated Greenhouse Agreements and policies to assist energy intensive businesses (EIBs). The industry is concerned that even the recently streamlined Negotiated Greenhouse Agreement (NGA) process will be cost prohibitive and a joint industry application unsuccessful. Smaller growers are concerned that if some of the largest producers obtain an NGA, they would face an uneven playing field. Growers with an NGA would be exempt from the tax in return for adhering to a path towards World's Best Practice (WBP) in energy use. Defining WBP and adjusting for New Zealand conditions will be a challenge.

VegFed has been working with greenhouse growers, MAF, the Sustainable Farming Fund and the Climate Change Office on these issues.

Vegetable growers have been proactive in relation to compliance issues relating to the use of public roads by tractors and agricultural implements. Signs and yellow indicator flags are now required when these vehicles are on public highways. Workshops have been run for vegetable growers where the new Land Transport Safety Authority regulations have been explained and discussed.

The availability and cost of labour continues to be an issue for growers. Asparagus growers are constrained by a lack of pickers. The peak production between mid-October and mid-November occurs before tertiary students are available. Some growers have had to mow asparagus off to delay head formation, rather than picking it. The shortage of labour is encouraging investigation into mechanical methods of harvesting. The tighter labour market affects the South Island more, due to a shorter harvest period, and growers there are having to pay higher wages to get crops harvested.

Contract work gangs are increasingly being made up of older workers, with younger workers being attracted to other industries or higher paying jobs like tractor driving. Securing workers continues to be difficult, with many of the job applicants from government referral agencies considered by growers to be unsuitable and lacking motivation to work. This is leaving many existing employees working longer hours or work not being completed.

Horticulture New Zealand is working with relevant government agencies to develop a long-term strategy to address this serious labour situation. Short-term strategies, such as a pilot scheme bringing Pacific Island workers for short periods and the extension of the Working Holiday Scheme, will be reviewed as a part of this strategy.

Horticulture New Zealand continues to advocate on behalf of vegetable growers on resource management issues. Of particular concern are strategies proposed to limit the impact of vegetable growing on the environment that, in the opinion of growers, are unworkable and possibly not going to achieve their intended aim. One specific example is the Environment Waikato Regional Plan where an appellant proposed stricter rules governing fertiliser use. Environment Waikato's proposed plan allowed for the application of fertiliser over 60 kgN/ha so long as a nutrient management plan was completed. Horticulture New Zealand is extremely concerned that a heavily regulated approach to try and control nutrient leaching will not produce the desired outcome of improved water quality, while severely constraining development and escalating costs.

Submissions have also been made on growers' behalf on policy issues including the proposed carbon tax and a discussion paper on fresh water issues. Submissions on the fresh water paper related to the critical importance of growers having access to good quality supplies of water, at the right volumes and times.

In order to limit the amount of pesticides leaching into the soil and possibly polluting ground water, a simple computer program called the GROWSAFE® Calculator has been developed using funding from MAF's Sustainable Farming Fund. The tool can tell growers which pesticides might be a problem in their soil type. Using the information contained in the program, a grower can select chemicals that are less likely to leach and accumulate in the soil.

It is becoming increasingly apparent that some growers need to do more to preserve soil structure. Crops grown in paddocks which have been continuously cropped lack vigour. In Gisborne, some operators now have to carry out at least five cultivations to obtain an adequate seedbed. On a positive note, more and more farmers are sowing down grass in the winter to fatten out of season lambs. The addition of pasture in the cropping cycle will have beneficial effects on soil structure.

LandWISE, the organisation set up to carry out cropping research in Hawke's Bay and Gisborne, is generating a lot of interest. The organisation is well supported by processing companies, vegetable growers, the Foundation for Arable Research, VegFed, the local councils, and Crop and Food Research. The autumn seminar held recently attracted over 150 people. A key success story is the

development of no-till technology for pea growing; 25% of Hawke's Bay peas are now grown using this method.

LandWISE has also distributed to growers a herbicide chart for maize, sweetcorn, peas and squash. The chart is designed to give growers information to make intelligent decisions regarding what herbicide to use. At least nine weeds, including fat hen, are showing resistance to common herbicides. The problem is worse in Australia, where at least 32 weed species are showing resistance.

Growers have major concerns about not having access to the latest pesticides, while losing the use of some older pesticides. Growers are concerned that the availability of control measures continues to shrink. The cost of registering new safer and softer chemicals is often prohibitively high, given the small size of the New Zealand market. Compounding this problem is that once a chemical is registered, a second company may import a generic equivalent under the same registration, thereby avoiding most of the registration costs.

For sweetcorn growers, the fungal diseases Northern Leaf Blight and Rust are ongoing issues. It is hoped that new varieties, with resistance to these diseases, can be bred and released in the near future.

The price paid for lease land is variable around the country. Following the recent downturn in the pipfruit industry in Hawke's Bay, a few larger cropping farmers who lease land are offering to remove apple trees at no cost to the landholder, provided that they can lease the land for cropping. Six month cropping leases are generally running at \$1,200-\$1,400/ha in Hawke's Bay. In Gisborne, leasing land is a little cheaper, at \$1,000-\$1,200/ha. In Canterbury, land leased for seed potatoes costs about \$1,500-\$1,600/ha, with good dryland with reliable rainfall costing about \$1,200/ha to lease. For other crops, lease prices are about \$400-\$500/ha.

Floriculture

This report looks at the flower industry in New Zealand, with the emphasis on the main export flower crops. All export statistics are provisional for the year ended March 2005.

Key Points

- A strong New Zealand dollar continued to negatively affect export returns.
- There is no national body for the New Zealand floriculture industry. A lack of clear vision for the industry creates difficulties for promoting, lobbying, education and research.
- Growers continue to assess their economic viability, and some of the more established growers are exiting the industry.
- New regulations such as those governing agrichemical use and the impending carbon tax impact on costs.
- New Zealand growers have lost or are losing their competitive advantage in some crops with the increase in production from countries in South America, Africa and China.
- International niche markets are declining for New Zealand grown product.
- Significant changes have occurred in the major export product mix.

Physical Factors

The following sections of the report cover the most significant export crops in order of free-on-board (FOB) value to New Zealand.

Cymbidium Orchids

In 2004/05, 3.73 million cymbidium stems were exported, an 18% increase in volume from the 2003/04 season. There was a high incidence of botrytis, especially in Northland. Larger growers are increasing their production areas. The main growing areas are Northland, Auckland, Waikato and the Bay of Plenty. There was an estimated 50 hectares (ha) of orchids under cover in these regions in 2002.

The exporters (New Zealand Flower Exporters' Association) and New Zealand Export Growers Orchid Association again took a full-page advertisement in the United States (US) magazine "Florist Review" to promote cymbidiums from New Zealand. This has helped exporters increase sales of cymbidium into the US, taking pressure off the Japanese market.

Demand for the unusual colours such as browns, reds and oranges continued in the US, but production of these colours has not increased significantly. The commercialisation of new varieties of cymbidium has a long lead time. From ordering, it can take two years for a grower to receive new material and then a further five years before plants are producing flowers. Despite this, new varieties are continuing to be introduced and are a requirement to remain in the international market place.

Production volumes for cymbidium in 2005 are expected to be similar to 2004. The current season has started slowly, with the continued warm weather of autumn delaying production. This is likely to result in a larger supply of flowers in the mid-season period, which may force prices down.

Calla – Cut Flowers

In 2004/05, total calla (*Zantedeschia*) flower exports were down by a massive 31% to 4.27 million stems from the 6.27 million stems exported in 2003/04. The cold, wet conditions of early spring delayed crops by approximately two weeks. The weather from January to April was fine in the upper parts of the North and South Islands, but very dry. Growers were disappointed with production volumes as tubers produced fewer stems than expected. Many smaller calla growers have exited the industry. A few of the larger growers are maintaining their size, but upgrading their varieties and colour mix. New Zealand breeders continue to release new varieties. One of the main aims for breeding programmes is to increase production from the traditional 0.8-1.25 stems per tuber per year.

Traditional colours such as red, orange, gold and pink are becoming more popular again. Novelty colours such as black, purple and brown have had good prices, but demand is limited.

Production volumes are expected to stabilise then begin to expand as the new highly productive varieties become established.

Other Crops

Other large export crops include sandersonia, hydrangea, foliage and members of the Proteaceae family.

The main crops in the Proteaceae family include protea, leucadendron and leucospermum, with production predominantly in the Bay of Plenty and Northland. Proteaceae exports were up 14% to 1.196 million stems in 2004/05 from the previous season. The weather wasn't a problem generally for growers, but production was later than normal.

Hydrangea exports continue to increase. Volumes of hydrangea were up to 723,000 stems in 2004/05, a further rise of 44% from 2003/04. Demand from markets remains strong with New Zealand's reputation for superior colours and quality. However, the large plantings in South America will continue to increase competition. New Zealand growers will need to focus more of their production on the "antique" colours.

The wet conditions in the South Island meant some growers had a higher incidence of fungal diseases and spotting on hydrangea blooms, and so lower than expected cropping. If it is a good season next year, production is expected to rise significantly.

Sandersonia continues its decline as a major cut flower. Stem numbers exported were down to 1.3 million in 2004/05. This was a drop of 630,000 stems from the previous year. Only a few larger growers of sandersonia for cut flower production remain. Flower designers in Japan have changed their style, so sandersonia is no longer in demand. The single colour of orange also remains a limiting factor for sandersonia use in design work (new colours are not currently available).

A large number of crops fall into the foliage category, with the major ones being pittosporum and phormium (New Zealand flax). Pittosporum volumes increased further to 1.55 million stems in 2004/05 and sales remain strong. Phormium exports remain steady at 420,000 stems in 2004/05. New varieties of shrubs are being introduced from Europe to increase the range of cut foliage available for sale.

Peonies

Exports of peonies fell to 659,000 stems in 2004/05 after the high 815,000 stems in 2003/04. The 2004/05 season had a very late start due to the cold winter and spring weather. The wet weather of early summer in the South Island had a big impact on later production. Some properties had rain every day of the harvesting season. This caused major problems, as stems need to be dry before packing. Hail storms hit fewer growers than normal, but caused major damage where they did hit.

Production is rising more slowly than anticipated as growers redivide plants to bulk up numbers, rather than cropping them. The number of plants being purchased for commercial production has slowed considerably, as growers wait and see how the exchange rate is going to move. The annual promotion

by the New Zealand Paeony Society took place in New York with help from New Zealand Trade and Enterprise. The Society also displayed at the Atlanta Floral Expo (in the US) in conjunction with an exporter.

Bulbs

In this report, the term “bulbs” has been used to encompass bulbs, corms, tubers, tuberous roots, crowns and rhizomes. The main exports are lilies, callas, tulips and sandersonia. Peony, gladioli, iris and freesia are also exported.

Lilium bulb exports remained relatively steady, with 2,604 tonnes exported in 2004/05. Exports are expected to remain at around this level. New varieties are being produced as they are released by overseas breeding companies. Issues with the importation of stock have nearly been resolved.

Calla tuber sales increased by 40% in volume, with 88.4 tonnes exported in 2004/05. Tuber production and quality was up in both Islands. New Zealand bred varieties continue to be popular overseas. However, New Zealand producers are having to compete against low cost production areas that have significantly cheaper freight options than that available from New Zealand. The demand for pot calla tubers is increasing worldwide, with overseas growers targeting Easter and Mothers’ Day sales in the Northern Hemisphere.

A large tulip exporter went into liquidation during 2004, which lowered export volumes to 610 tonnes for the 2004/05 year.

Sandersonia tuber exports were 26.3 tonnes in 2004/05, compared with 41 tonnes in 2003/04. This drop was expected as demand for tubers is falling. There has been a trend for Japanese floral designers to move away from sandersonia use. This affects both flower and tuber sales.

Financial Factors

Revenue

The New Zealand dollar continued to strengthen against the major currencies for the majority of the year and therefore continues to lower New Zealand grower returns. The US dollar exchange rate broke through the 70c mark, reaching 74c in March 2005 before slipping back to 70c at time of writing. The Japanese yen exchange rate rose from 69 yen in July 2004 to 78 yen by April 2005. The Euro remained relatively stable at around 0.56€ Exchange rate increases have had a big impact on growers financially, and on the economic viability of their businesses.

Cymbidium Orchids

The average price for cymbidium orchids was \$5.01/stem (FOB) for the year to March 2005. This is a slight increase over the \$4.85/stem (FOB) the previous year. Approximately two-thirds of export sales of cymbidium are at a fixed price, up from about half of all sales in 2001. Japan was unseasonably hot in September which slowed sales, but increasing sales into the US has taken some pressure off this market. Early Dutch production essentially stopped New Zealand exports into Italy and Spain a few weeks ahead of normal.

The increase in stem export volumes from the previous season does not necessarily result in increased gross margins. The reason for the increased volume is that growers have increased their productive area to maintain viability. The slight increase in the gross margin in 2005 is mainly due to better prices from early new varieties and from those that produce high quality mid-season flowers.

Prices are expected to remain somewhere between the last two years’ prices for the 2005/06 season.

Calla – Cut Flowers

Despite the exchange rates and increasing world competition, returns were up on the previous year to \$1.16/stem (FOB) for the year ended March 2005, although volumes were about a third down on the previous year. Three of the larger flower growers exited the sector last season, which resulted in

reduced supply and competition amongst the remaining exporters. New Zealand grown calla flowers remain in demand internationally due to the high quality. Many other countries are now growing significant volumes of coloured callas including China, Colombia, Chile, Kenya and their native home, South Africa. South American and African growers have a lower cost of production than New Zealand and lower freight costs to their main markets of the US and European Union (EU) respectively. Free trade and duty free agreements between some of these countries give an additional advantage over flowers from New Zealand.

Gross margins for calla flower production fell by almost 10% in 2005 from the previous season. The demand for flowers remains good for high quality flowers, but the effects of production from other countries are beginning to be realised. Though the quality is not as high, the production is ten times greater than New Zealand's total annual production.

Prices in 2005/06 are expected to continue in the range of the previous years.

Peonies

The average price for a peony stem dropped 14 c to \$1.82 (FOB) for the year to March 2005. The prices for lower paying varieties remained relatively stable, but were lower than last season for the premium varieties as their supply increased. The main market is the US, so the high dollar influences returns.

The gross margin for peonies has dropped by 5% in 2005 from the previous season. It had been predicted that prices would fall over time as more countries started to produce this niche crop. The increase in the volume produced of older varieties is bringing down the average price per stem of peonies. The only way that peony growers will remain competitive in the future is to produce the newer varieties. The price of a newer variety can be two to four times the price of an older variety.

For the 2005 season, prices are expected to fall. If the volume increases, prices will come under pressure, especially if the high US dollar (USD) remains, and increasing volumes arrive in the US from production areas in Chile and Argentina.

Hydrangeas

Prices for hydrangeas increased to \$2.41/stem for the year to March 2005. Demand for hydrangeas remains high, with the US being the dominant market. There was good demand for reds, pinks and greens with the more common blue and white varieties returning lower prices.

Prices are expected to remain good so long as the quality stays high. Sales are expected to increase, especially if the dollar falls against the USD.

Bulbs

Bulb sales were up slightly to \$22.5 million (total FOB export value) for the year ended March 2005. Liliium bulb sales were \$9.39 million for 2004/05, a slight decline on the \$9.46 million of the previous year. Worldwide prices for liliium bulbs improved after the glut of Northern Hemisphere production in previous years. Calla tuber sales were up, with FOB sales of \$5.07 million for 2004/05.

The demand for pot and cut flower callas continues to increase with new production areas worldwide. Prices for tubers remain stable, though returns are reduced slightly due to increases in production costs. This is reflected in the gross margin for calla tuber production.

Sales from sandersonia tubers continues to fall as demand drops. FOB sales were \$2.33 million for 2004/05. The cost of tubers has risen with the exchange rate (Japan is the biggest market) and demand is falling. Tulip bulb sales were \$3.88 million for the year ended March 2005.

Roses

While roses remain the largest flower crop internationally, only a small volume (\$62,000 FOB) is exported from New Zealand. The huge volumes grown in countries such as Colombia and Ecuador make the crop uneconomic to export from New Zealand, except to some Pacific Island countries.

Domestically, roses remain in demand and rose growers are continuing to increase their production to supply the local market. For this reason a gross margin report for roses is included.

Good prices were received on the local market in winter and spring but slipped after Valentine's Day, when total flower volumes increased. Production was down in autumn, despite the good weather. New varieties are being planted, although there are problems importing cutting material. The rose growers' group remains active and provides a forum for growers to meet and discuss issues in the industry.

The 5% increase in the gross margin for 2005 from the previous season reflects a good demand for flowers most of the year, lower volumes of minor crops on the local market, and interest in new varieties. This increase occurred even though production per square metre was less than the previous season.

Expenditure

In general, overall spending is down. Supply costs have risen with chemicals increasing in price, despite many being imported. Packaging costs have increased, especially those containing plastics (polyethylene, polypropylene) due to the rising cost of oil. Increasing fuel (gas, oil, coal) costs directly affect those growers who are heating covered structures. Labour costs continue to rise with the increase in the minimum wage.

Due to New Zealand's distance from markets and the very perishable nature of flowers, air freight is the only option. This freight makes up a large part of costs for a grower. Fuel surcharges by domestic airlines are now standard cost to the grower. Shipping a box of orchids from Auckland to Tokyo costs approximately \$28. Domestic freight charges are also increasing as freight companies pass on the cost of rising fuel prices.

Many growers are now realising how much it is costing to grow, harvest and pack their flowers. If they are not confident of getting a price that covers this cost, they will not pick the flowers. This means growers are far less willing to send "on consignment" to the auctions in Japan.

Net Result

The gross margins for several of the largest flower crops are listed in Table 1. These figures assume the grower to have average to above average management skills in Auckland growing conditions (Southland for peonies). The revenue, prices, yields and expenditure levels are average for the market and climatic conditions of the season. Labour costs for high input activities such as flower harvesting and packing are included.

The gross margins are on a per square metre basis, but crops are not necessarily directly comparable with each other. Some gross margins are based on crops that produce year around, e.g., roses, while other crops are produced over a 6-8 month period, e.g., calla tubers. There can also be considerably different capital investment for the different crops, e.g., outdoor versus glasshouse growing. When predicting returns the average prices mentioned elsewhere in the report must be treated with care. The average price each grower receives is affected by the mix of production quality, quantity, timing, flower colour or variety, and market destination. New growers may have lower production levels and quality in the first seasons, and product may therefore go to lower paying destinations.

Table 1: Gross Margins (\$/m²)

Crop	Growing Method	2002/03	2003/04	2004/05
Cymbidium	Greenhouse	29.70	29.00	30.27
Calla - Cut Flowers	Greenhouse	23.80	24.90	22.55
Calla - Cut Flowers	Field	5.20	2.98	2.85
Calla - T1 Tubers	Greenhouse	13.50	15.00	12.60
Peony Rose	Field	6.80	10.78	10.33
Rose	Greenhouse	19.50	35.10	37.19

Source: AgFirst Consultants NZ Ltd

Overall, cymbidium orchids and roses continue to return a high and stable gross margin. This is a result of the extremely high investment required to produce these two crops, and the specialist skills required to achieve consistent quality. This is the major limiting factor for new entrants.

Issues and Trends

Flower exports for the year ended March 2005 are estimated to be \$37 million (total FOB export value of flower and foliage sales). This is slightly down on the \$38 million of 2003/04. Cymbidium orchids remain comfortably the largest export flower crop, with \$18.7 million in sales. Despite a major drop, Zantedeschia (calla) remain second with \$4.94 million in exports. Hydrangea (\$1.74 million), peonies (\$1.19 million) and proteaceae (\$1.17million) complete the top five crops. Sandersonia, once clearly the number three crop, now has sales of only \$712,000.

The large number of crops and the wide geographical spread mean it is difficult to define a “typical” New Zealand flower grower and an overall industry group no longer exists. However, some smaller industry groups remain strong and are providing education and support to their members and carrying out research. However, economic pressure on businesses is affecting the time and energy members have to spend on grower groups. The Northern Flower Growers’ Association continues to work closely with VegFed on lobbying and research issues.

The New Zealand Flower Exporters’ Association has released an updated handbook “Growers’ Guide to the New Zealand Flower Industry” for those considering growing flowers for commercial markets. It encourages growers to think about such issues as location and environment, and covers choosing what to grow, growing, harvesting and selling, budgets and government regulations. The guide also provides a glossary of common horticultural terms and a list of industry contacts, and will be beneficial for those looking at entering the industry.

Small pockets of research continue for floricultural crops. Crop and Food Research scientists are involved with work on tissue culture, breeding, crop and post harvest physiology on crops such as calla, limonium, gentian and cyrtanthus. Research aiming at developing novel orchids to export from New Zealand is also being worked on by plant pigment scientists. Funding is being raised for research into the problem of sepal burn on hydrangea flowers.

Commercial projects are very common and cover a diverse range of topics. Crop and Food Research work mainly with New Zealand companies but there are partnerships with international companies. Floriculture funding from FRST has been static over the last five years. Future funding is dependent on industry groups and businesses co-investing with FRST.

Compared with previous years a smaller number of floriculture projects were supported with Sustainable Farm Fund grants in 2004. These include:

- the continuing work of the New Zealand Ashiro Gentian Growers’ Group to develop technology for growing Ashiro gentians in New Zealand; and
- the New Zealand Protea and Foliage Growers’ Association research into an integrated disease management strategy for the protea and foliage industry.

The sustainability of growing flowers continues to be one of the major issues the industry faces. While it is difficult to typify a flower growing business, many are small operations run by a single person or couple. Often, one or both supplement income by working off the property. The high number of self-employed people, combined with a low average number of employees, generates other issues. Training is more difficult in smaller enterprises. For example, there may not be enough steady work to employ someone on a full time basis. Or once skills have been obtained, the employee does not have the option of moving up through the business into a more senior role.

The trend is for some smaller growers to exit the industry and large growers to expand to create more economic units. Several of the larger companies involved in floriculture in New Zealand are

internationally owned companies or joint ventures between New Zealand and overseas companies. Most of these overseas companies are located in the Northern Hemisphere, so crops in New Zealand can be grown in the “off season”.

The increasing cost of land close to urban areas affects many flower growers. Rising regional and city council rates on the increased land value put pressure on economic viability. Increased land values also make the subdivision of properties an attractive option, and there are increasing numbers of growers taking this path. Growers who try to sell properties as going concerns and who have been successful in the industry may end up selling the land only.

A considerable number of growers started growing flowers as part of a diversification process on farms. With sectors such as lamb and beef performing well, there is not such a strong incentive to diversify at present. Exporters have noticed a steady decline in enquiries about getting into the industry.

As part of New Zealand’s obligations under the Kyoto Protocol, the proposed carbon tax is due to come into effect on 1 April, 2007. It has been announced the tax will be \$15/tonne of carbon dioxide emitted. Growers need to heat their greenhouses whether they are taxed or not, and believe the tax will reduce their ability to invest in energy efficient technology. The Northern Flower Growers’ Association, through VegFed, have been involved in lobbying the government’s Climate Change Office.

Regional councils continue to tighten the regulations regarding runoff and wastewater collection. The New Zealand Fertiliser Manufacturers’ Research Association produced an updated “Code of Practice for Fertiliser Use” in 2002. The Code has been, or is being, incorporated into most regional councils’ regional plans. It is expected the Code of Practice/regional plans will see growers move away from intensive soil grown production to soil-less substrates that will offer better potential for recirculation of fertiliser and water management.

New Zealand, as a member of the Montreal Protocol, agreed to phase out the use of methyl bromide for non QPS (Quarantine and Pre-Shipment) uses by 31 December 2004. This influences the type of growing media used by growers. Methyl bromide was the previous fumigant of choice for soils. Hence, soil as a growing media is being replaced by items such as pumice, rockwool and coconut fibre.

The New Zealand Horticulture Training Organisation (NZHITO) offers a Certificate in Horticulture. This certificate is available with the option of specialising in one of seven sectors (amenity, fruit, vegetable, nursery, arboriculture, floriculture and landscape). With the exception of floriculture, all of these sectors are represented by a national organisation that works with NZHITO (the former industry organisation FloraFed used to fulfil this role before it was disestablished). This lack of representation affects the promotion and development of the floriculture course and can be observed in trainee numbers. Floriculture currently makes up 1.8% of the 1,500 NZHITO trainees, and this percentage is falling as other sectors rapidly increase their trainees (overall trainee numbers have nearly doubled from 763 in 2001 to 1,430 in 2004).

Japan has reviewed its plant quarantine system after pressure by New Zealand and other countries. Seven pests, including species of thrips, mealy bug, mite and scale, were added to their non-quarantine pest list in April 2005. While this may reduce fumigations, often importers are unable to wait for the identification of an intercepted pest. Hence, growers need to continue to ensure export product is pest free.

From December 2004, New Zealand Customs began operating an X-Ray machine for the inspection/clearance of containerised air freight at Auckland International Airport. This added security step has meant exporters must have shipments ready further ahead of flight departures.

Under the Hazardous Substances and New Organisms Act (HSNO), changes were made to the handling of agrichemicals from 1 January 2005. Agrichemicals are listed by trade name and toxicity by the Environmental Risk Management Authority. This is an independent body established under the

HSNO Act. An Approved Handler certificate is now required for the handling of a number of agrichemicals. The most hazardous chemicals require tracking and are more tightly controlled. To purchase a tracked substance you need to be an Approved Handler. If a grower has two year's experience with pesticides under the previous legislation, they can apply to be a Transitional Approved Handler until 31 December 2006. The Growsafe® Introductory course now has a HSNO assessment component and can be used to obtain the full five year Approved Handler test certificate. Growsafe® training programmes educate growers in the use of agrichemicals and are administered by the New Zealand Agrichemical Education Trust.

The importation of new species has caused some debate in the past year. If a species is not on the MAF Plants Biosecurity Index, an application to ERMA and a risk assessment needs to be completed before the species can be imported. To further complicate the issue, there is no fully comprehensive list of species that are lawfully in New Zealand. The high cost of the risk assessment process (\$30,000 for a full assessment) has basically stopped importers bringing new species in to trial for commercial use. It has been suggested that the high cost of legal importation may encourage smuggling of seeds or propagation material.

New varieties (of species already in New Zealand) continue to come onto the market for many crops. The numbers for the ornamental/flower industry have remained relatively steady for the last five years, and in 2004 there were 122 applications for Plant Variety Rights (PVR) protection. The application numbers for new calla varieties is now steady after a peak several years ago. There are now 60 varieties of calla that have been applied/granted PVR in New Zealand, with the majority from New Zealand breeders. New Zealand bred phormium are now protected in countries such as Australia, the US, Canada, Japan, South Africa and the EU. New Zealand bred hebe are also sold widely overseas, but New Zealand is no longer the main breeder of new varieties.

Most new cut flower varieties originate with breeders in Europe, the US and Israel. Crops such as commercial alstroemeria and liliium are 100% foreign bred. New Zealand breeders work with crops such as calla, phormium, hebe, agapanthus, leucodendrons, lavender, magnolia, leptospermum and pittosporum. However, most varieties, with the exception of calla, are destined for garden use rather than cut flower cropping.

The cost of protecting varieties is expensive. If the breeder wants protection for their new variety, an application must be made in each country it is to be sold in. The regulations are similar for those countries belonging to UPOV (International Union for the Protection of New Varieties of Plants), but have conditions specific to each country. The application costs alone for the EU and the US are several thousand dollars each. For small breeders this is a large cost, which in most instances must be paid before sales start. New Zealand Trade and Enterprise assists some companies with intellectual property costs.

Local market flower sales remain strong and are estimated to be worth approximately \$60-70 million at the wholesale level. It is difficult to quantify the size of the market with the wide range of outlets (e.g., auctions, direct selling) available. As society becomes more urbanised and with the right promotion, it is believed there is good potential for local sales to increase.

The prices in winter and spring 2004 were good on the local market as there were fewer flowers available. Increasing volumes after Valentines' Day brought down prices slightly. There was high demand at Mothers' Day, with good auction sales. The higher dollar has allowed a slight increase in imported products which compete with locally grown flowers. Carnations have been in short supply. Lilies are proving very popular and, with roses, are dominating the markets. Locally grown anthuriums are fashionable. However, small local growers are evaluating their economic viability. Increasing transport and auction costs, combined with the increasing costs of inputs such as chemicals and labour, are reducing returns.

The Northern Flower Growers' Association showed new cut flower and foliage varieties at the Ellerslie Flower Show in 2004 in an attempt to educate the public on the care of cut flowers. The NFGA also ran a nationwide campaign to increase sales of roses and other flowers for Valentines' Day. While difficult to quantify the success of the promotion, the NFGA believe it is essential to keep promoting flowers. The difficulty comes with finding funds. A small number of individual growers contributed, but the majority did not.

Summerfruit

This commentary discusses the New Zealand summerfruit industry in the two main production regions, Hawke's Bay and Central Otago. Hawke's Bay growers mainly supply fresh summerfruit to the domestic market and processing fruit to Heinz Wattie's Limited (Heinz). Central Otago is much more export-oriented and grows a wider variety, with a larger proportion of cherries and apricots.

Key Points

- Hawke's Bay summerfruit production was down in 2004/05 compared with last season due to hail damage affecting plums and nectarines, and the removal of a number of peach and nectarine plantings prior to the season.
- Cooler than normal temperatures in late spring to early summer 2004 reduced Central Otago summerfruit volumes by 15-20% compared with last season.
- Export fruit volume in 2004/05 decreased 29% from 2003/04 levels, with nectarines falling 85%, cherries 26% and apricots 10%.
- The high New Zealand dollar:United States dollar (NZD:USD) has markedly reduced export returns. Grower returns are down 50% for cherries, and 60% for apricots compared with 2001/02, if a constant selling price in USD is assumed.

Physical Factors

Climate – Hawke's Bay

The 2004/05 Hawke's Bay summerfruit season enjoyed more favourable weather conditions compared with the 2003/04 season (refer Table 1).

Table 1: Hawke's Bay Weather Data

	2004/05 (mean °C)	Average (mean °C)	2004/05 (mm rain)	Average (mm rain)	2004/05 (GDD)	Average (GDD)
September	10.1	11.3	9	32	64	49
October	13.4	13.6	68	24	124	110
November	15.3	14.8	26	61	166	147
December	15.0	17.2	116	25	165	225
January	17.9	18.0	32	56	248	254
February	19.2	18.5	18	24	258	222
March	17.0	17.2	146	39	222	200
April	12.3	14.5	60	86	106	119

Source: NIWA (Whakatu Logger Site)

October, December and March were wet months, with three to four times their average rainfall. The October and December rain events were each confined to a few days duration, so had minimal impact on weather-sensitive summerfruit varieties. The March rainfall events were prolonged and adversely affected the later Golden Queen harvest. Good rain in early December assisted fruit sizing for varieties ripening over the Christmas/New Year period.

Wet weather in early December and a prolonged spell of humid weather in mid to late February caused peach russet to break out in Golden Queens where fungicide application had been inadequate.

Apart from process peaches, brown rot incidence in Hawke's Bay summerfruit crops was very low this season. With the general absence of spoilt fruit, the incidence of *Carpophilus* fruit beetle was also lower than 2003/04.

A severe hail storm on the night of 17/18 October caused serious damage to smooth skinned summerfruit such as plums and nectarines in parts of Hawke's Bay. The worst affected of these crops were abandoned, while those less damaged suffered reduction in yield and quality.

Early spring conditions up to mid-September were cool and dry, followed by good to average temperatures over the summerfruit blossom period, giving ideal fruitset conditions, even for Sundrop apricots which experienced their second good crop in a row. November was warm and dry, giving favourable conditions for fruit development.

December was abnormally cool, with mean temperatures 2.2°C below the long-term December average. This slowed up fruit development and spread out the harvest. Temperatures returned to normal during January, with February being slightly above average due to warmer than normal night temperatures. March had average temperatures, again due to warm nights. April was cold, with average temperatures 2.2°C below normal, with some light ground frosts toward the end of the month. This tended to bring earlier than usual leaf drop.

Spring frosts were virtually absent this season, with only one light air frost on 20 September. Prior to 9 September, frosts were frequent, but as they occurred early in the season and followed a cold late winter, did minimal damage.

Climate – Central Otago

In Central Otago, weather conditions were favourable for summerfruit flowering and fruit set then, by mid-spring, the weather turned cold, with December the coldest recorded since 1947. Low temperatures delayed harvest and accompanying heavy rain severely damaged the early cherry crop.

During January, high temperatures occurred to give the hottest recorded January in 41 years. The high temperatures sped up ripening of the already late harvest, as well as improving fruit quality.

Production

Hawke's Bay

Total summerfruit production in Hawke's Bay was lower than the 2003/04 season. Established properties without hail losses produced similar, or slightly lower, summerfruit crops than last season. Apricots were reported to be about 10% down in volume. Peach, nectarine and cherry volumes were similar to last season, and plum volumes were well down due to hail damage.

District production of peaches and nectarines was well down due to a number of plantings being pulled out prior to the season (Table 2).

Table 2: Area Planted in Summerfruit (ha)

Crop	Hawke's Bay		Otago		National	
	2003 ¹	2004 ¹	2003 ¹	2004 ¹	2003 ²	2004 ¹
Peaches	500	450	90	90	760	710
Nectarines	200	190	200	195	510	495
Apricots	190	185	370	350	590	565
Cherries	15	30	350	360	550	575
Plums	130	145	95	105	400	420

¹ Estimate only.

² Agricultural production statistics (Provisional) June 2003.

Heinz process volumes were well down on last year with peaches falling from 6,050 tonnes to just under 4,630 tonnes, and plums down from 600 tonnes to just under 250 tonnes this year, well below factory requirements. Forty-one tonnes of nectarines were also processed.

Water stress through the growing season and cool weather conditions affected fruit sizing of the Golden Queen crop. There were also several large aging process peach blocks pulled out in the district. There are a number of newer process peach orchards being developed, so it is anticipated that process peach production levels will stabilize or increase. Favourable local market peach prices attracted some potential process peach supply onto the local fresh market.

Hawke's Bay cherry production is on the increase, as new plantings made over the last few years come into production.

There is also high interest in production of newer high quality mid to late season plums, and production of these is expected to increase over the next few years. Established older varieties such as Purple King cannot compete with the newer generation of plum varieties, so are disappearing. Fortune is the dominant fresh market plum variety at present.

Central Otago

Central Otago growers reported slightly below average production this season with falls of 15-20% in some instances. Smaller fruit size due to the colder late spring/early summer temperatures was the main cause of the lower crop volume. Generally plum and apricot production was about average, while cherry, nectarine and peach production was down by 20%. Heavy rain in December damaged cherries ripening at that time, with some cherry growers in the wetter Roxburgh end of the district reporting losses amounting to 50% of their cherry crop.

Export

Export fruit volume fell substantially this year from 2,657 tonnes in 2003/04 to 1,884 tonnes this season, a fall of 29% (Table 3). Export volume for all summerfruit types fell with nectarines showing the greatest fall of 85%, cherries 25.5%, peaches 20%, apricots and plums around 10%. Apricots and cherries comprise most of the summerfruit exports, accounting for over 95% of the total.

Table 3: Summerfruit Export Volume (tonnes)

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
Cherries	444	612	503	712	1,115	831
Apricots	2,019	1,362	1,784	1,196	1,090	973
Nectarines	594	249	177	45	436	66
Peaches	173	66	9	5	5	4
Plums	53	34	56	9	11	10
Total	3,283	2,323	2,529	1,967	2,657	1,84

Source: Summerfruit NZ Inc

Australia remains the main export apricot market, taking 46%, followed by the US (28%), and the United Kingdom (21%).

The cherry market continues to be dominated by Taiwan, which imports 57% of New Zealand's export crop, followed by the US (17%), and South Korea (10%). Taiwan imported most of the nectarines, while the Pacific took the rest, along with most of the peaches and a third of the plums.

Financial Factors

Revenue

Export Returns

National data was not available for the 2004/05 season at the time this report was prepared.

The high New Zealand exchange rate has markedly reduced export returns. Table 4 illustrates the effect that rising exchange rates since the 2001/02 season has had on Taiwan cherry and US apricot returns, using a constant selling price in USD.

Table 4: Impact of Exchange Rate on Export Summerfruit Returns

	2001/02 NZD1.00 = USD0.42	2002/03 NZD1.00 = USD0.52	2003/04 NZD1.00 = USD0.64	2004/05 NZD1.00 = USD0.70
Cherries (NZD/kg)	17.24	13.17	9.96	8.77
Apricot (NZD/tray)	20.31	14.31	9.40	7.61

Source: Freshmax News, November 2004

Cherry growers have suffered a drop of 50% in their returns, while apricot growers are down 60% in their returns compared with 2001/02 for product selling for the same price on the export market.

Export cherry growers marketing a mix of export and local product are estimated to have received an average price of \$10.50/kg as against \$9.65 for local market only.

Export apricots were in the range of \$3.00-\$4.00/kg grower return.

Data is not available on grower returns for other export summerfruit.

The strong NZD and intensifying competition from Chilean product, along with rising freight costs, is making summerfruit exporting difficult. Increasing production on the Australian domestic market, notably late fruit from Tasmania, is limiting export potential there too.

Local Market Returns

Hawke's Bay summerfruit growers report improved returns this season.

Early spring prices, particularly for smaller sized nectarines of which there were plenty, were described as disappointing. As the season progressed, fruit size improved, and it became obvious to the supermarkets that there was not a large crop coming on, so prices steadily improved, with late nectarines around \$1.00 up on last season, at \$3.00/kg average return.

Royal Rosa, the main early Hawke's Bay apricot variety, suffered from small fruit size and was difficult to sell for good prices, often only achieving around \$2.00-\$2.30/kg grower return, compared with \$2.50-\$3.00/kg in 2003/04.

Later apricot varieties with better fruit size sold at higher prices than last season, up 10-15%.

Yellow fleshed peaches sold well with much better prices than last season. White fleshed peaches, particularly Scarlett O'Hara, met with buyer resistance due to its reputation for poor eating quality caused by it being harvested when too immature.

Hawke's Bay cherries again met strong demand, selling at prices in the \$14-\$15/kg range. This good price held up through the selling season due to the later harvest of South Island cherries and the reduced Marlborough cherry industry (with vineyards replacing cherries there).

With the loss of a substantial portion of the plum crop through hail, the Hawke's Bay plum market was stronger than last year, with plum prices lifting into the \$3.00-\$5.00/kg range.

Hawke's Bay summerfruit had high quality this year with minimal brown rot and other post-harvest spoilage issues. Consequently, buyers had confidence in the product and it flowed well through market distribution channels. Where hail was not a problem, recovery rates were better than normal.

Fruit quality in Central Otago was only average, with apricots averaging \$2.30, nectarines \$2.25, plums \$3.00 and peaches \$2.45/kg.

Table 5: Average New Zealand Wholesale Summerfruit Returns \$/kg

	2001/02	2002/03	2003/04	2004/05
Nectarines	1.80	3.55	2.00	2.40
Peaches	1.70	3.55	2.00	2.40
Apricots	2.20	3.35	2.00	2.25
Cherries	4.50	7.50	7.30	8.00
Plums	2.80	4.00	2.50	3.00

Source: AgFirst and W King

Processing Returns

Heinz prices remain unchanged from the 2003/04 season, with Grade 1 peaches greater than 65 mm diameter at \$590/tonne, and second grade 58-65 mm at \$365/tonne.

Dessert grade plums are paid \$1,000/tonne and jam grade \$800/tonne.

Expenditure

Overall, Hawke's Bay growers have spent less on frost protection this year, but more on irrigation.

Packaging costs in Hawke's Bay for cardboard cartons increased 4%, while other packaging materials were unchanged. Post-harvest handling costs, including coolstorage, increased by up to 15% in some instances. With good lines of fruit not suffering hail damage, improved first grade recovery would have more than compensated for this increase in handling charges.

Freight charges also increased in the order of 15%.

Growers report significant increases in labour costs because their harvest season is over the summer holiday period. This means they have to absorb a higher proportion of the casual worker's holiday pay entitlement relative to the time they use casual labour, compared with employers who employ labour for much longer periods, or at other times of the year when statutory holidays are less frequent.

Central Otago growers report relatively small increases in costs from the previous season, but mention pesticides, labour and rising fuel prices as the areas where costs are increasing.

Net Result

Hawke's Bay fresh market growers who were unaffected by hail reported a better financial result than the 2003/04 season. Prices and packout recovery more than compensated for their increased packing, packaging, labour and freight charges (Table 5).

Local market apricots, peaches and particularly nectarines, showed good increases in gross margin.

The process peach gross margin in Hawke's Bay fell slightly. However, many process peach growers would have sold a portion of their production for very good prices on the local fresh fruit market, giving them an increase in gross margin over last year.

Otago growers are worse off than last season for export apricots, export and local market cherries and plums, with the export cherry and plum gross margins in particular falling to around half of last season's levels.

Table 6: Summerfruit Gross Margins

Crop	Market	Marketable Production (kg/ha)	Gross Return (\$/ha)	Gross Margin (\$/ha)		Variance (%)
				2004/05	2003/04	
Otago:						
Apricots	Export/local	13,200	40,920	10,480	11,135	-3
	Local	13,200	30,360	4,160	2,840	+46
Cherries	Local	13,200	127,380	29,980	33,164	-10
	Export/local	13,200	138,600	38,600	85,770	-55
Nectarines	Local	23,900	53,775	26,525	5,100	+420
Plums	Local	12,000	36,000	12,040	22,360	-46
Peaches	Local	15,300	37,485	7,366	3,200	+130
Hawke's Bay*:						
Apricots	Local	18,000	40,500	7,884	5,667	+39
Nectarines	Local	20,000	48,000	9,108	4,960	+84
Plums	Local	15,000	45,000	17,670	5,470	+223
Peaches	Local	18,000	43,200	14,756	11,250	+31
	Process	25,000	13,750	4,300	4,750	-9

Source: AgFirst and W King

* Hawke's Bay figures are based on estimated district average production. Growers with good frost protection would have had gross margins of \$20,000-\$30,000 for nectarines, peaches and plums, while those without frost protection would have had negative gross margins.

Issues and Trends

The high NZD relative to the main export trading currencies for summerfruit (USD and AUD) is making exporting very difficult, and threatening the business viability of summerfruit growers who rely heavily on export markets.

Harvest labour was in adequate supply, but expensive, due to the impact of the Holidays Act. The Act loads the cost of holiday pay heavily onto the summerfruit industry, which employs its casual labour for a short period at the time of the year when most statutory holidays fall.

More remote producers need to supply worker accommodation to secure harvest staff. Applications for resource consents to erect worker accommodation can add considerable expense and can be up to \$10,000, as well as causing substantial delays in being able to provide accommodation.

Export competition from Chile is increasing. Their better climate for summerfruit and lower cost structure make it difficult for New Zealand summerfruit exports to compete in markets such as the US.

Quality issues, particularly the marketing of small immature fruit on the local market, continue to plague the industry. Early apricots, plums and white-fleshed peaches do not realise their full market potential for this reason.

The downturn in apple returns is expected to increase plantings of summerfruit in Hawke's Bay.

The Hawke's Bay process industry is introducing newer process peach varieties which will spread the harvest season away from that of the main peaks in the apple harvest.

Red fleshed plum supply suitable for processing remains below processor requirements.

Recently introduced new high-quality dessert plum varieties are stimulating the planting of plums ahead of other types of summerfruit.

Nurserymen are now budding to order, which means trees will no longer be readily available to supply speculative planting in the industry. This should lead to more controlled development of the industry, rather than the boom and bust plantings seen in the past.

Some local market shippers report difficulty in maintaining an effective cool chain during transport to market, and damage to consignments from lack of due care and attention by transport contractors.

Freight costs are expected to increase markedly in the future due to rising oil prices.

Subtropicals

This report provides commentary on the subtropical crops of avocados, citrus, persimmons, feijoas, tamarillos and passionfruit. These crops are grown in the warmer parts of New Zealand, particularly Gisborne, the coastal Bay of Plenty, greater Auckland and Northland. Most of these crops are harvested in autumn and winter, and the commentary discusses the 2005 harvest season. However, avocados ripen over the spring and summer, so the crop harvested in 2004/05 is detailed in the gross margins, and likely yields for 2005/06 are discussed.

Key Points

- A late start to the 2004/05 summer delayed plant growth, but autumn conditions were generally favourable, resulting in increased yields for feijoas and persimmons.
- Lower gross margins are likely in the avocado, citrus, persimmon, tamarillo and passionfruit sectors in 2004/05 compared with 2003/04, due mainly to lower export returns resulting from the high value of the New Zealand dollar (NZD), and increased freight costs.
- Feijoa growers are likely to achieve improved gross margins this year due to better yields and improved domestic prices compared with 2004.
- The avocado industry expects total production to increase by 85% in 2005/06, due to improved fruit set in spring 2004 and maturing plantings.

Physical Factors

Climate

Cool temperatures in November and December 2004 had a significant impact on the 2004/05 growing season. For subtropical crops other than avocados, the cool start had unfavourable effects as it delayed plant growth and, in feijoas, caused flower abortion. For avocados, the cool spring delayed flowering and the resulting fruit set was excellent, promising high yields in the 2005/06 year.

Conditions then changed fairly swiftly into a hot dry summer from mid-January to March. Rain fell in April and May, but temperatures continued to be mild throughout the autumn. The low rainfall was beneficial to avocado and passionfruit growers by reducing the incidence of pests and fungal diseases. Tamarillo orchards required irrigation and those orchards with insufficient irrigation noticed slowed plant growth. Fruit size is expected to be smaller than usual for avocados, feijoas, and tamarillos, due mainly to the dry weather.

Production

Overall, the 2004/05 growing conditions proved more favourable than the previous season, when the cool and frosty spring reduced yields significantly.

Avocado yields in 2004/05 averaged 4.8 tonnes/ha on bearing orchards. This was 5% below 2003/04 yields and was the lowest yield since 1996/97, reflecting the poor conditions for fruit set in spring 2003. Fruit set in spring 2004 was greatly improved and, for the 2005/06 crop, the industry expects an 85% increase in total production. Yields are expected to increase to about 7.5 tonnes/ha on average, and the bearing area has increased.

All the subtropical crops are reporting later fruit maturity, which has delayed harvest by two- to three weeks in 2005. Rain during May interrupted harvest of mandarins and persimmons.

The citrus harvest will progress through to late 2005. Early indications suggest a similar level of production to 2004.

The persimmon harvest is currently in progress. Total production is expected to increase by 15% over the 2004 level.

Feijoa fruit size is smaller, but yields are up around 20% on 2004 levels.

The tamarillo harvest is just beginning. Yields appear likely to be similar to 2004.

Passionfruit production is generally lower in 2005 than in 2004, but is extremely variable between orchards, as is typical of this crop.

Table 1: Features of the New Zealand Subtropical Fruit Sector

Crop	Current Area 30 June 2002 (ha)	Main Growing Regions	Area in Main Regions (%)	Key Harvest Period	Lifespan (Years)
Avocados	4,313	Bay of Plenty (BOP), Northland	82	Sep-Mar	>15
Citrus:					
Mandarins	950	Northland, Gisborne, Auckland	82	Apr-Jul	>15
Oranges	573	Northland, Gisborne	70	Jun-Oct	>15
Lemons	360	Northland, Gisborne	65	All year	>15
Tangelos	163	Gisborne, BOP	61	Oct-Nov	>15
Grapefruit	82	BOP, Gisborne, Auckland	67	Jul-Oct	>15
Total citrus	2,128				
Persimmon	282	Auckland, Gisborne	57	Apr-Jun	>15
Feijoa	198	BOP, Auckland, Waikato	54	Mar-May	>15
Tamarillo	270	Northland, BOP, Auckland	73	Jun-Aug	4-6
Passionfruit	70	BOP, Taranaki, Northland	77	Feb-May	4-6

Source: Statistics NZ, Fruition Horticulture, Avocado Industry Council

Financial Factors

Revenue

The estimated value of subtropical crops on the export and domestic markets is summarised in Table 2.

Table 2: Estimated Value of Subtropical Crops

Crop	Estimated Sales Value (\$ million)	
	Domestic (Year Ended June 2004)	Export (FOB) (Year Ended March 2005)
Avocado	15.5	28.9
Citrus	16.4	7.4
Persimmon	0.6	7.2
Feijoa	1.7	0.1
Tamarillo	1.4	0.7
Passionfruit	Not known	0.4

Source: HortResearch (sector estimates, Statistics New Zealand)

Export revenues for most crops are lower this season due to the high value of the NZD. This has affected all crops, and has also encouraged growers to supply product to the domestic market instead of exporting it. Competition from other suppliers is also a factor on export markets. For some of the subtropicals sold as exotics into the United States (US) market, competing New Zealand and Chilean product has affected sales.

Citrus exports were mainly mandarins (63%) and lemons (28%) in 2004/05.

The average avocado export price for 2004/05 was down about 10% on the 2003/04 year, at \$4.81/kg FOB, but this is similar to the 2002/03 price. Average avocado returns on the domestic market were down 5% to \$2.78/kg at the first point of sale (e.g., the wholesaler). There is a considerable range of avocado orchard yields. The industry estimates 15% of orchards are achieving three times the average industry yields and revenue. This is due to orchard siting, set-up and management, and indicates that average yields are well below the biologically feasible levels.

Domestic citrus prices (Table 3) are fairly stable except for tangelos, which have attracted lower prices this year due to reducing consumer interest in the fruit.

Table 3: Citrus Domestic Market Prices (Orchard Gate) 2005

	Price (\$/kg)
Mandarins	1.00
Oranges	0.45
Lemons	0.50
Tangelos	0.38
Grapefruit	0.40

Persimmon export prices are affected by the supply of Australian fruit to the same markets. In 2005, the New Zealand industry intends to use storage technology purchased last year to store fruit for marketing later, to reduce direct competition with Australian product.

Domestic prices were higher for the 2005 feijoa crop compared with the poor prices received last year. The late harvest meant demand was good from the start of the season. There was less of a mid-season production flush than usual, which helped to maintain prices through the season. Yields have increased about 20% from the disappointing level in 2004.

Tamarillo growers have just begun harvesting their 2005 crop. Export returns are lower due to the exchange rate. Fewer growers are exporting, preferring to sell their fruit on the domestic market as returns are similar. The export market is important for taking some of the volume during the traditional July peak supply to help avoid a dip in domestic prices. The industry has estimated maintenance volumes of supply to the US with a view to meeting those volumes.

Passionfruit export prices are lower in 2005 due to the exchange rate. Domestic prices have held at levels similar to last year.

Expenditure

Freight costs have been higher for all crops. This is due to the increased cost of fuel, airfreight and shipping.

Grower spending is steady. However, costs such as picking and packing have changed in proportion to yield. Many growers of subtropical crops have small areas and use little hired labour. Some growers have commented on the costs of compliance with quality assurance and chemical handling schemes. Industry groups want increased alignment between domestic and export market assurance schemes to reduce the costs of compliance and duplication of effort.

Net Result

The gross margin is the annual crop income less the direct growing costs and is a means to compare crops. However, it does not show the relative profitability between different crops over their life span, as it excludes establishment costs, the time lag until production, and expected economic life span, which all vary greatly.

Gross margins for the subtropical fruits are shown in Table 4. The figures are for one hectare of well-managed full-bearing orchard. Gross margins vary greatly between growers, particularly due to different yields and the amount of paid labour used.

Table 4: Yields/Gross Margins for Subtropical Crops

Crop	Yield (tonnes/ha)	Gross Margin (\$/ha)
Avocados	4.8	5,150
Mandarins	25.0	15,900
Oranges	40.0	9,650
Persimmons	12.5	8,500
Tamarillos	18.0	19,600
Feijoas	7.0	10,350
Passionfruit	5.0	14,450

Source: Agriculture New Zealand Ltd

Note: the gross margins are for the 2005 calendar year, except for the avocado gross margin which is for the 2004/05 June year.

The gross margins are lower than last year for all sectors except feijoas. Lower export returns and higher costs, especially for freight, are the main reasons. Feijoas have had a better yield and improved domestic market prices.

Issues and Trends

Avocado production is expected to increase by 85% in 2005/06 and exports by 100% due to the limited room for expansion of New Zealand consumption. The industry has been waiting for production to increase for a number of years as the area planted has expanded significantly, but there has been a sequence of low yielding years. They consider that markets have been under-supplied to date and do not expect major problems marketing the increased crop. That said, considerable planning and communication has been in progress because of the crop increase. Domestically, growers have been reminded of the impact of orchard practices on market options, fruit size and quality. The industry has been discussing harvesting logistics such as the availability of sufficient cherry-pickers to pick fruit higher in the trees. Production should continue to increase as young plantings begin to yield. About 43% of the industry planted area is of trees younger than bearing age, with around 350 ha planted annually over the past few years.

Australia takes around 90% of New Zealand's avocado exports. Other markets are the US and Japan. The US has been a major market, taking 25-50% of New Zealand exports from 1999/00 to 2002/03. Volumes sent there have reduced in recent years, due mainly to low production and the exchange rate making domestic sales attractive relative to supplying export markets. However, the US market imports a huge volume of avocados and is an option for New Zealand as production increases.

Feijoas have again had some rejections at the US border due to pests on the fruit. The feijoa fruit calyx is a good hiding place for pests. Immature mealy bug insects found are assumed to be quarantine species, although they may not be. The New Zealand feijoa industry has developed a pest list and intends developing a protocol for pests to assist with entry to the US market. A very limited range of chemicals may be applied for pest control on export feijoas due to a requirement for low residues in fruit at the US border. As well as maintaining good orchard pest control, growers need to very carefully examine fruit at packing and have had success using compressed air to clean in and around the fruit calyx, as is done on persimmons.

The US market is important for tamarillo, feijoa and passionfruit exports. The current exchange rate makes supplying the market less attractive, but growers and exporters consider it is important to continue exporting to the US in order to maintain a market presence for the future, and to help avoid over-supplying the domestic market during peak seasonal production. However, some growers are

diverting their crop to the domestic market because of the exchange rate. New Zealand's citrus and persimmon sectors are both still seeking access to the US market. It is estimated that the process will take another two years. New Zealand persimmons are currently mainly sold in Asian markets, but are commonly traded in US dollars. Persimmon exporters are also applying for market access to mainland China.

The lack of sufficient labour for picking has been an issue for citrus orchards in Kerikeri. This has caused some controversy about sources of labour and piecework rates of pay. Recently, a group of Samoan workers were brought in to work on orchards for one company. Backpackers are also an important workforce. Seasonal labour for citrus is less of an issue in Gisborne, as it is a larger urban centre located in a diverse growing district that can provide work over a wide range of crops through most of the year. Labour is an area where the industry body, Horticulture New Zealand, has been doing significant work.

The avocado industry reports a gap between current technology and what is being applied to orchard management. They are working on strategies to address this gap. The tamarillo industry plans to hold more regular field days in the coming year to cater for newer growers.

Research programmes are continuing into rots in persimmons, feijoas and tamarillos, and into improving persimmon taste. The persimmon sector is also continuing work to develop "soft" pest control strategies and appropriate application technologies. The research programme in the avocado industry is focusing on quality and production factors such as managing pollination, ripening, late season quality, new varieties and rootstocks. Some of this is pitched at meeting niche-marketing opportunities. There is also a significant quality management programme in the avocado industry to manage market quality and to determine factors such as the optimum time lapse between picking and sale.

Orange growers are still trying to progress their goal of obtaining a compulsory levy from growers in order to fund research and development. The process has been slow due to a lack of financial resources and administration changes within the industry. Tamarillo growers have commissioned an analysis of the antioxidant status of tamarillos. The results will be used in promoting the health benefits of the fruit. Tamarillo growers are interested in trialling biological controls for whitefly and aphid pests that are in use overseas.

About 5% of the avocado crop is processed into oil. This improves the overall appearance and quality of avocados sold fresh on the domestic market, by removing blemished fruit. The oil is mainly used for culinary purposes. One major orange juice manufacturer has planted a sizeable block of oranges for processing. One Bay of Plenty citrus processor accesses "backyard" grapefruit trees through service clubs. Feijoas have a strong processing stream at relatively high prices for processing grade fruit. Grower co-operatives co-ordinate supply to processors. There were some issues over pricing this season, with feijoa growers seeking more than processors were prepared to pay. There are reports of unfulfilled demand for certified organic feijoas for processing.

Some passionfruit growers have covered their orchards with netting to help prevent frost damage. Whether this will be financially worthwhile on the short-lived crop has not yet been determined. Growers with nets also report less wind damage, less sunburn on fruit, and higher fruit quality.

Several people involved in the subtropical industries have been participants in the Industry Leadership Development Programme run by the pan-industry organisation, Horticulture New Zealand.

Export Berryfruit

Key Points

- Weather effects continue to limit performance levels for most berryfruit crops.
- Inconsistent supply caused by limited disease control options during adverse weather is hampering long term market development plans for boysenberries.
- Predicted increases in blackcurrant yield are starting to come on stream at the same time as Eastern European producers are selling fruit at below the cost of production. Blackcurrant growers have responded by investing in higher productivity varieties, focusing on blackcurrant health benefits in other markets, and “belt tightening”.
- Industry groups continue to be very frustrated at the difficulties associated with importing new plant material for breeding programmes. The 2005 Budget funding announcement for a three year programme to increase government-provided level 3 post-entry quarantine facilities was welcomed by all berryfruit industries.
- The blueberry, boysenberry and blackcurrant industries continue to invest significantly in the HortResearch Healthful Berries programme.

Physical Factors

Climate

The 2004/05 season was very climatically challenging for most berryfruit growers.

Flooding of strawberry plant nurseries in February 2004 had an impact on the available amount of plant material for strawberry planting for the 2004/05 season.

A cool spring in 2004 was followed by cool and wet conditions in December. In the Waikato region, 127 mm rain fell, compared with the long term average of 75 mm for the month of December. These conditions had an adverse impact on both strawberry and boysenberry yield and quality.

In the Nelson region, wet spring conditions resulted in botrytis disease at blackcurrant flowering. In the Canterbury region, there was significant hail damage during the harvest in both mid and south Canterbury, in the week prior to Christmas. Raspberries were less affected by the cool wet spring conditions.

Nationally all berryfruit crops enjoyed very dry conditions from early January. For crops with peak yield harvested at this time, conditions were much more favourable. Dry summer conditions proved ideal for strawberry ground preparation, prior to fumigation and polythene laying for the 2005/06 planting.

Bud quality is good for cane and bush berryfruit as winter 2005 commences, with adequate (rather than high) cane and bud numbers for production in the following season.

Production

Cool wet weather in spring and early summer significantly reduced strawberry fruit size and quality, resulting in a 15% yield reduction. Most strawberry growers continued to harvest well into January in an attempt to “catch up” on total yield. Fruit quality from this unusually late harvested crop was variable, depending on both the variety and growing conditions experienced.

Strawberry plant numbers are expected to reduce again this year. Industry estimates are for plant sales of around 12 million in 2005, compared with 13 million plants last year. However, the planted area is not declining due to changes in the plant variety mix. Domestic and international demand for the strawberry variety Camarosa is increasing. This variety is more vigorous than the former mainstay variety Pajaro, so is planted at wider spacings. Production is not much affected as both varieties achieve similar yields per hectare.

The cool spring delayed the main crop outdoor blueberry harvest by almost three weeks. By the end of the season, the harvest had caught up to the normal pattern. Fruit quality was excellent and a much higher proportion of the crop was harvested for fresh export and domestic sales, compared with the previous two wet harvest seasons.

Rust caused significant defoliation of blueberry bushes towards the latter part of the previous growing season. Growers with proportionately higher plantings of susceptible varieties experienced significant reductions in yield. Growers with machine harvested blocks for process fruit recorded yields about 40% lower than average. Rust was minimal in the current growing season because of the dry summer conditions experienced from early January. Consequently, expectations for yield in the upcoming season are good based on bud quality and leaf condition.

The wet conditions during boysenberry harvest contributed to a 10% reduction in forecast tonnage and lower product quality. Boysenberry machine harvesting continues more or less regardless of weather. However, fruit harvested in wet conditions is less suitable for individual quick freezing or block freezing, and more suitable for puree or concentrate production. These latter options are lower value uses for boysenberry.

The combined effects of botrytis and split fruit caused by wet weather in Nelson and hail damage in the Canterbury region resulted in the blackcurrant harvest being slightly lower than expected. The expected harvest was 8,000 tonnes, whereas 7,300 tonnes were actually harvested. The yield per hectare of 5.2 tonnes achieved for 2004/05 was well down on recent years, but is close to the long term average.

Table 1: Long-term Average and Seasonal Berryfruit Yields (t/ha)

Crop	Long-term Average	2002/03	2003/04	2004/05
Blueberries	6.0	5.8	5.4	6.0
Strawberries	23.0	26.0	22.8	22.1
Raspberries	6.0	6.0	5.4	6.0
Boysenberries	15.0	15.0	12.75	14.4
Blackcurrants	5.0	6.4	6.8	5.2

Source: NZ Berryfruit Growers' Federation Inc, Strawberry Growers New Zealand, Blackcurrants New Zealand Ltd and NZ Boysenberry Council

Financial Factors

Revenue

Strawberry grower returns were lower this year when compared with the previous season. Almost no exports were supplied to United States (US) customers, because of uneconomic return levels. In 2002, returns from US markets were in the order of \$30/tray. Offering prices in 2004 have declined to \$12/tray. The high value of the New Zealand dollar (NZD) against the US dollar also had the effect of eroding grower returns last season. Exporters have focused on Asian markets with price levels similar to previous years, at \$14.50/tray.

Fresh market returns for export blueberries are holding almost steady. However, the return for super-early supply from October has been eroded as the number of suppliers at this time has increased, and price is very elastic in response to supply. Blueberry fresh export market diversification continues, with almost equal volumes sent to the four main market areas (the US, Europe, Australia and Japan).

Fresh blueberries have also been exported to Taiwan and Hong Kong, where quality standards are less stringent than in Japan.

Internationally, export prices for frozen process blueberries are still holding strong, but the relatively high value of the NZD against our main trading partners continues to impact negatively on grower returns.

Pricing for each boysenberry product type remains similar to last year. However, the yield reduction and higher proportion of lower value fruit products have had a depressing effect on grower returns. A longer term consequence of lower than expected New Zealand supply may be difficulty in obtaining repeat business for higher value products from international customers. International customers will receive a proportionately reduced volume of high value boysenberry products this season, by comparison with quantities ordered.

Substantial competition from other international blackcurrant suppliers is resulting in high product supplies to European markets and causing downward pressure on price. Some Polish offerings have been at or below the cost of harvest (NZD0.20/kg). An expected outcome will be a decline in the New Zealand industry average price of about 8% to \$1.10/kg.

Expenditure

Strawberry labour costs were up because of the relatively low daily fruit throughput. However, strawberry growers continue to find more cost-effective ways of using labour, so growers are employing fewer staff.

The recent implementation of the amendment to the Holidays Act has had a significant impact on labour costs where growers must harvest on days that are specified as holidays. For many berryfruit growers, there are two sets of holidays, Christmas and New Year, where work must proceed and higher wages are paid, adding significant cost.

Boysenberry and blackcurrant industries continue to see the retiring of small and under-performing blocks. The planted area is not declining, as existing large scale growers continue to replant lower performing blocks. This replanting of under-performing blocks with better yielding varieties is expected to continue, so that fixed direct costs are effectively lowered in relation to productivity.

Net Result

Table 2 shows gross margins for export berryfruit crops. The gross margin represents income less variable costs of production. The gross margin does not allow for overhead costs such as taxation, debt servicing and administration. Levies charged per unit of production or sales are included in the gross margin.

Table 2: Gross Margins

Crop	Product Type	2002/03 (\$/ha)	2003/04 (\$/ha)	2004/05 (\$/ha)	Change (%)
Strawberries	Fresh	17,949	23,723	17,509	-26
Blueberries	Fresh	29,672	20,781	23,938	+15
Blueberries	Frozen	5,515	6,805	2,962	-56
Boysenberries	Frozen	8,046	6,461	7,977	+23
Raspberries	Frozen	8,568	7,356	7,626	+3
Blackcurrants	Frozen	4,570	3,865	2,198	-43

Source: Linda Hawes

Issues and Trends

International competition is impacting on strawberry market opportunities and returns. In the US, the main factors limiting market opportunities are the high NZD:USD, and increasing competition from US domestic and US managed Central and South American producers. Asian fresh markets have increased imports of low cost fresh strawberries from Egypt. Low cost frozen strawberry imports from China are a concern to both the Australian and New Zealand domestic markets. Buyers prefer the New Zealand product in these markets, as competitor fruit quality is uncertain.

Strawberry growers are concerned about profitability, as the proportion of total production supplied to the domestic market continues to increase. Over the last five years, the proportion of fruit provided to the domestic market has jumped from 45% to 70%. If New Zealand strawberry growers return to average productivity levels, returns from the domestic market could be adversely affected.

Blackcurrant grower profitability is likely to be seriously eroded by high volumes of European product, selling at considerably less than the cost of production both in Europe and New Zealand. The industry expects this trend to continue for the next few years. In New Zealand, the industry is responding with consolidation in grower numbers and area, and no new planted area is expected in either this or the following winter.

Blackcurrants New Zealand Limited, the industry product group, continues to invest in research and development through the Healthful Berries project. This project involves clinical trials evaluating the benefits of high vitamin C and anthocyanin levels, further breeding focused on specific berry qualities, yield and cultural advantages, and production research.

Blackcurrants New Zealand Limited has serious concerns about the role and ongoing function of the Horticultural Export Authority (HEA). The industry is unhappy about the recent granting by the HEA of a new export licence. The blackcurrant industry considers that their concerns about consultation and decision making over export licences are not being satisfactorily addressed.

Importation of overseas bred plant material for variety evaluation and development programmes is currently extremely difficult for berryfruit. The industry is concerned about the withdrawal of the accreditation of New Zealand's major new strawberry variety supplier, University of California, by MAF Biosecurity, and the review of the Import Health Standards for plant materials. The industry wants to be more involved in these decisions.

Even if these issues are resolved, the high cost of accession of plant material to be placed in the Hort Research Level 3 quarantine facility, currently the only one available to the industry in New Zealand, would limit the berryfruit industries' capacity to import and evaluate new varieties. The inclusion of a government funded high security glasshouse and diagnostic service for plant post entry quarantine in the 2005 budget is welcomed by all berryfruit industries. However, it will take some time for berryfruit industries to catch up on new variety material available internationally, for evaluation in New Zealand.

The blueberry industry is being hampered by delays in the import of new blueberry breeding material from international breeding programmes. With the advent of rust in New Zealand, the New Zealand breeding programme now considers rust tolerance or rust resistance to be critical factors to include in New Zealand bred material. Plant material with rust tolerance does exist in New Zealand, but no plant material with both rust tolerance/resistance and other desirable characteristics. Currently, there is little progress in the breeding programme given the Import Health Standards Review, the high cost of level 3 post-entry quarantine facilities, and the length of the queue to access such facilities.

Very little new blueberry planting is occurring. Where blueberry planting is proceeding, it is replacement of rust susceptible varieties with established older varieties with rust tolerance.

The boysenberry industry continues to contract internationally. Growing areas in California, Oregon and Chile have declined as growers move into more profitable alternative land uses. The New Zealand industry has a commitment to supply boysenberry products to US manufacturers, to ensure that it is

maintained as a taste presence in that market. Industry production is expected to increase over the next few years based on some new and replacement plantings of higher productivity varieties. This should give international manufacturers more reassurance regarding reliability of supply.

In the blueberry industry, established growers are leasing more land to provide capacity for post-harvest operations. The high capital cost to develop in-house post-harvest operations and the lack of contract post-harvest services, has driven the industry in this direction.

Demand for blueberries, both internationally and domestically, continues to increase as more consumers become aware of the health benefits of blueberries. Blueberries New Zealand Inc continues research on the health benefits of blueberries, but does not expect conclusive results in the short term. Promotion investment by the blueberry industry has resulted in demand growth for the whole blueberry sector in New Zealand. The industry believes it has the supply and logistics capacity to meet existing demand for this season.

The blueberry industry is currently grappling with the high cost of registration of agrichemicals for rust control. A number of berryfruit industry groups are co-operating with agrichemical proprietors, to jointly fund research into efficacy, for registration purposes in New Zealand.

Ground fumigation continues to be an issue for the strawberry industry. The good news is that methyl bromide is available for ground fumigation for the next two seasons. This follows a successful application by both the strawberry fruit and plant growers to the Montreal Protocol Secretariat for critical use exemption.

Few (if any) growers have used the alternative fumigant gas mix Telone C35. Trial and commercial results both within New Zealand and internationally, have shown this gas to be less effective in challenging conditions, and results in lower productivity after several seasons' use in the same ground. Growers are understandably concerned about long term sustainability given the pending demise of methyl bromide as the fumigant of choice and the lack of a convincing alternative.

Strawberry Growers of New Zealand Inc continues to fund research programmes focused on the following key areas:

- fruit rot control;
- root rot disease control;
- market access to Australia;
- re-accreditation of the University of California as a plant supplier; and
- revision of the Import Health Standard for strawberry plant material.

The New Zealand Boysenberry Council is a participant in the Healthful Berries research programme which, for the boysenberry industry, commences investment in the 2005/06 year and will continue for three years. The industry has applied to have Sustainable Farming Fund investment in a research programme to develop a predictive model for dry berry disease. This disease is one of the most devastating fungal diseases that boysenberries are at risk from every season.

The largest boysenberry grower group is developing several new boysenberry products as a commercial venture, although these are not yet at the stage of commercialisation. The new boysenberry products have potential values higher than the current range of product types produced using boysenberries.

Investment in disease control will provide the boysenberry industry with better capability to harvest yields on a more predictable basis. This should help allay concerns expressed by some international customers regarding unpredictable New Zealand supply of fruit over the last two years.

Table 3: Berryfruit Industry Statistics

Crop	Area (ha)			Grower Numbers		
	2003	2004	2005	2003	2004	2005
Blackcurrants	1,325	1,450	1,450	49	50 ¹	48
Blueberries	N/A	N/A	N/A	80 ²	81 ²	81
Boysenberries	210	210 ³	206	55	55 ³	52
Raspberries	225	225	220	65	60 ⁴	60
Strawberries	246	220 ⁵	175	125	120 ⁵	98

Source: ¹Blackcurrants New Zealand Ltd estimates, ²Blueberries New Zealand (Inc), ³NZ Boysenberry Council estimates, ⁴Raspberry grower estimates, ⁵estimate based on plant sales figures, New Zealand Berryfruit Propagators Ltd

Apiculture

This section comments on a range of beekeeping activities and products throughout New Zealand.

Key Points

- As at May 2005, there were 2,947 beekeepers owning 292,928 hives on 19,219 apiaries.
- Beekeeper numbers declined by 261, after falls of 582 last year and 290 in 2003.
- The 2004/05 honey crop of 9,689 tonnes was an increase on last year's crop of 8,888 tonnes and a welcome outcome after a disastrous start to the season.
- World honey prices are in free fall, but the real effects are yet to be felt in New Zealand.
- A Pest Management Strategy for varroa came into force in February 2005 and affects all South Island beekeepers, who must pay a levy based on hive holdings.
- The Carniolan strain of bee was made available to beekeepers after semen was introduced from Austria and Germany. This is the first importation of non-Italian genetic material for over 80 years.

Physical Factors

Climate

Spring and summer are the critical months for beekeepers as indifferent weather in these periods can greatly affect pollination activities and honey crops. The spring and early summer months of 2004/05 were characterised by extreme temperature swings, with a very cold and wet December, an average January, and a very hot February. December was the coldest since 1945. Late frosts, which can damage clover and therefore affect honey production, occurred in many inland areas of both Islands. Most beekeepers were forced to feed sugar syrup to strong hives well into December and even into the New Year, especially in some South Island locations.

Summer rainfall was well above average in southern Wairarapa and in much of the eastern South Island, from mid Canterbury to Southland. Flooding occurred in many of these coastal places and they also experienced a very poor honey crop. Many southern beekeepers shifted their hives to Central Otago and produced a surplus crop there.

February was the eighth hottest on record, according to NIWA. The nectar flow didn't start until the second week in January, but extended well into February in many places, especially in the South Island. In the North Island, hot dry conditions led to significant soil moisture deficits which burnt off nectar yielding species and finished the honey crop.

Honey Production

The spring and early summer months were the worst for many years. The season looked to be heading for a disaster, but a period of settled weather in mid to late January saw a honey crop being produced in most districts. Some exceptionally good yields were recorded in Northland, the West Coast of the South Island and Central Otago. Yields in these areas ranged from 20-90 kg/hive. The New Zealand honey crop was calculated at 9,689 tonnes, up 801 tonnes from the 2003/04 season of 8,888 tonnes (Table 1). The six year average is 9,044 tonnes.

Table 1: New Zealand Honey Crop (tonnes)

	2000	2001	2002	2003	2004	2005	6-year Average
Northland, Auckland, Hauraki Plains	982	869	593	1,066	1,047	1,221	963
Waikato, King Country, Taupo	1,434	672	708	2,210	1,164	1,095	1,214
Bay of Plenty, Coromandel, Poverty Bay	1,300	794	319	2,064	2,052	1,498	1,338
Hawke's Bay, Taranaki, Manawatu, Wairarapa	1,323	1,735	750	1,607	1,330	1,440	1,364
Marlborough, Nelson, Westland	705	606	300	1,350	550	800	719
Canterbury,	2,310	2,743	921	2,400	1,500	1,500	1,896
Otago, Southland	1,555	1,725	1,091	1,555	1,245	2,135	1,551
New Zealand	9,609	9,144	4,682	12,252	8,888	9,689	9,044
Yield/hive (kg)	30.0	29.4	15.0	40.8	30.2	33.1	29.6

Source: AgriQuality New Zealand

Pollination

Cold, wet spring weather made the pollination season a most difficult one. Beekeepers found it very hard to keep sufficient bee numbers in hives and many hives that were split to increase, or replace, winter losses, did not meet pollination standards, especially for kiwifruit. Auditing of 32 kiwifruit orchards and 573 hives by AgriQuality Limited found that 129 hives (22%) failed to meet the Kiwifruit Pollination Association (KPA) standard. Most of these hives met the requirements for frames of brood (eggs, larvae and pupae), but were short of frames of bees. ZESPRI (the main kiwifruit marketer) and the KPA are planning to make growers and beekeepers aware of the issues and the benefits of having hives that meet KPA standards.

Pollination fees for kiwifruit in the Bay of Plenty area increased again from an average of \$130/hive last season to over \$140, with a top price of \$185 being reported. These prices included delivery into the orchard and three one-litre feeds of sugar syrup to stimulate the bees to collect pollen. Where brokers were used, beekeepers were paid \$101-103/hive, with the beekeeper delivering hives into depot apiaries in the Bay of Plenty, and brokers placing the hives into orchards and feeding them sugar syrup. Competition from avocado growers for pollination hives could see a shortfall in hives for next season, which begins in October 2005.

The price for pollination hives is expected to increase again next season, reflecting increased costs in labour, fuel and sugar, plus the expected hive shortage. However, if honey prices continue to decline, more beekeepers may commit to pollination, which could increase competition and help keep pollination prices stable.

Live Bee Movements and Exports

After the huge demand for package bees to Canada last season the forward orders for this year were well down. This reflected the decline in world honey prices and a reasonable winter in Canada, with normal winter losses. For the exporting season, which is generally February to May, 15,711 1 kg packages of bees and 3,251 individual queen bees were exported (further details are included in the Bulk Bees section of this report). This compared with 27,729 packages of bees in 2004 and 25,121 in 2003. Three hundred bumble bee queens were exported to China for use in pollinating greenhouse crops.

Financial Factors

Revenue

Honey

Bulk honey prices paid to New Zealand beekeepers are determined, to a large extent, by the ability to export any honey that is surplus to local market requirements. Approximately 3,000-3,500 tonnes must be exported each year to maintain local market stability. Supermarkets continue to rationalise and reduce the number of honey packers producing house brands. Beekeepers are watching the buyout and merger of named supermarkets with interest. Some fear the new owners will drive down wholesale prices and reduce varietal packs.

The real concern for New Zealand producers is the recent and dramatic fall in world bulk honey prices. World supplies of honey increased, especially as Brazil, Argentina, Mexico, Canada and China increased production and a number of Asian countries, which had not had a presence on the world market previously, began exporting. This increase in production occurred because of high world prices experienced for the past three years. Some of the honey exported from the Asian countries was most likely Chinese honey that was banned from Europe and the United States (US) because of contamination with antibiotics.

This extra honey, plus the advent of honey syrups, which is honey extended with sugar syrups such as high fructose corn syrup, have all impacted on world prices. World prices are around NZ \$1,500-2,200/tonne (FOB). New Zealand honey producers who also buy in honey, tried to keep prices up to maintain the viability of their suppliers and retain the value of their own honey crop. Honey packers and export agents, who are not producers, tended to pay less for honey and claimed they were only reflecting true world prices.

Some varietal types of honey, such as rewarewa, were in poor supply, which is the opposite of last season. However, bulk prices remained the same as last year at \$4.50-4.75/kg. White clover type honeys were in good supply and while early sales were made at \$4.50-\$5.00/kg, current offerings are very slow and range from \$2.80-4.30/kg. Thyme honey realised around \$5.80/kg, pohutukawa \$5.00-6.00/kg, while honeydew reduced from a high of \$4.20 to \$2.60/kg. Spot prices of \$5.50/kg were paid for certified organic clover honey. Honey producers usually supply the 200 litre drums, while the buyer usually pays the freight and returns the drums.

The bulk price for “non active” manuka honey remained static at \$5.00-7.40/kg. Manuka showing the Unique Manuka Factor (UMF) ranged in price from \$0.90/point of activity to \$1.20/point. Bioassays are done to determine the non-hydrogen peroxide activity or UMF, which is expressed as points of activity. The points of activity payments usually begin when the honey scores over 10 points. Thus, honeys with an activity of 15 would be worth \$13.50/kg at \$0.90/point, and up to \$18.75/kg at \$1.25/point.

Comb honey sales were moderate as buyer and consumer resistance was felt. Last season prices into Europe of \$50/dozen pieces increased to \$58/dozen on small turnover.

Queen Bees

Queen bees were in great demand and most sold for \$20-\$22 each on the local market, with a high of \$26. Breeding stock from the new strain of Carniolan bees was released onto the New Zealand market. The bee breeder, who imported the semen from Austria and Germany, is developing the breed in New Zealand using artificial insemination. Stock is now available at 75% pure Carniolan and select breeders sold for over \$500/queen bee. The Carniolan strain is preferred by many Canadian beekeepers as it has superior over-wintering abilities compared with the Italian strain. It is also hoped that the new breed will have better tolerance to the varroa bee mite.

Bulk Bees

Bulk bees are exported as “package bees”, which are cardboard and wire mesh units that contain 1-1.5 kg of bees, a queen bee and a food source. Exporters paid \$20/kg delivered for bulk bees and \$20/queen bee. These prices are the same as last season. The demand from Canada was much reduced from last season due to falling world prices for honey - a number of Canadian beekeepers still have not sold last year’s crop.

A major development was the opening of the US market for live bees, albeit with fairly restrictive pre-testing requirements. New Zealand officials and beekeepers have been trying for over 30 years to access this market in anticipation of demand from almond growers in California for pollination. This industry may be in a crisis situation next February-March as there have been huge new plantings of almonds, honey bee stocks have been decimated by varroa and other conditions not fully understood at this time, and the costs of trucking hives in from as far away as Florida are increasing. There are also restrictions in bringing in hives from the southern states where there are africanised bees and fire ants. Because of the impending shortage of hives, pollination rental fees paid to US beekeepers increased from around NZD70 to NZD150/hive, with spot prices of over NZD200 being paid. Some sources are saying there will be a demand for 1 million hives for almond pollination next year.

Propolis

Propolis is a gum or resin that is exuded by trees and shrubs and collected by bees. It has antibiotic properties and is made into many therapeutic products after extraction and refining. The price paid for raw propolis increased to \$160-170/kg for pure product, from \$120 last year. This translates to approximately \$64-\$80/kg of raw product as collected from the hives or scraped off bee frames and boxes. Propolis collected by the beekeeper is usually mixed with beeswax, which reduces its value.

Beeswax

Most of the wax produced in New Zealand is used to produce sheets of beeswax foundation, which go into new frames, or it is used to coat plastic frames. Quantities of beeswax are also made into candles and cosmetics. Prices paid to beekeepers for light cappings wax ranged from \$5.00-\$5.40/kg (including freight) and \$4.50/kg for darker wax from old brood combs. There is a good market for New Zealand beeswax in Europe, as pesticides and miticides do not contaminate much of our wax. However, recent shipments of North Island beeswax to Europe tested positive for miticides used for varroa control, which has eliminated that market.

Honey powder

Honey powder is a relatively new product that is used in the manufacturing industry wherever a honey flavour or content is required. Honey powder is much easier to use than liquid or granulated honey. Honey powder is mixed with maltodextrin to keep it free flowing. This product dilutes the honey flavour, so full bodied honeys are used to make the powder. Most of the powder was exported to Asian countries and averaged 20 tonnes/month.

Table 2: Returns for Apiculture Products

Product	2003/04	2004/05
Bulk honey ¹ – colour grade (\$/kg FOB) ²		
Light (clover type)	4.50-5.20	3.50-5.00
Light amber	4.20-4.50	3.50-4.75
Dark	4.00-5.00	3.20-4.75
Manuka ³	6.00-6.50	6.00-6.90
Beeswax (\$/kg FOB):		
Light	6.50	5.40
Dark	5.50	4.50
Pollen (\$/kg FOB):		
Not dried or cleaned	10.00	13.00
Cleaned and dried	17.00-30.00	20.00-37.00
Pollination (\$/hive):		
Pipfruit, stonefruit and berryfruit	50.00-55.00	55.00-60.00
Kiwifruit - Hawke's Bay	80.00-100.00	80.00-110.00
- Taranaki	70.00-80.00	80.00-90.00
- Auckland	80.00-115.00	85.00-185.00
- Bay of Plenty	100.00-150.00	101.00-165.00

¹ Beekeepers supply drums or containers.

Source: AgriQuality New Zealand

² FOB "free-on-board" - purchaser pays freight and probably insurance.

³ 2004/05 prices are for non-active manuka honey.

Expenditure

Increased compliance costs and levies continued to impact on the industry, especially as prices for honey and beeswax declined. Meanwhile prices for sugar, packaging, diesel and labour continued to increase. Increased compliance costs are also being felt by exporters and suppliers to exporters. All premises that process, handle or store bee products for export must now be registered with the New Zealand Food Safety Authority (NZFSA). Premises that process bee products for the European Union must also be registered separately with NZFSA, as must all exporters. All beekeepers with honey factories will have to have an approved Risk Management Plan by 1 July 2006.

The National Beekeepers' Association continued the compulsory apiary levy to fund its American Foulbrood Pest Management Strategy (PMS) under the Biosecurity Act. The fee is \$20 plus \$8/apiary. In the South Island another levy of \$2.00/hive, with a minimum charge of \$10 (plus GST), was implemented for the first time in April 2005 to fund the South Island Varroa Pest Management Strategy. Both levy demands have encouraged a number of hobby beekeepers to give up beekeeping, and both levies have been rather controversial.

Net Result

Beekeeping involves many different operations such as bulk honey, retail packed honey, pollination services, other bee products such as propolis, pollen and live bees, and various combinations of these. It is difficult to get financial data on beekeeping operations as there is no extensive modelling information available. Table 3 is adapted from templates provided by the AgriBusiness Group and updated for costs and income for 2004/05. All the models except the specialist honey operation (South Island) are from the North Island. The big difference in variable costs reflects the huge costs of treating for varroa mite, a cost South Island beekeepers do not have to incur. The highly intensive model produces honey as well as double pollination shifts for gold and green kiwifruit, and also bulk bees for the package bee export market.

Table 3: Income and Expenditure for Various Beekeeping Operations 2004/05

NZD	Extensive: 1000 Hives	Specialist Honey: 700 Hives (South Island)	Specialist plus Bee Products: 700 Hives	Pollination and Specialist Honeys: 700 Hives	Highly Intensive Honey, Bee Products, Live Bees and Pollination: 700 Hives
Honey	126,000	107,695	93,156	90,790	105,350
Bee products	3,096	56,770	28,498	58,700	14,890
Pollination				45,500	78,000
Total revenue	129,096	113,372	121,650	142,160	198,240
Variable costs	89,200	59,671	93,481	115,780	141,480
Fixed costs	9,990	11,000	8,500	8,289	9,200
Total costs	99,100	70,671	101,981	124,069	150,680
EBIT*	30	61	28	26	68
Total EBIT	29,996	42,701	19,669	18,091	47,560

* Earnings before interest and tax

Source: AgriBusiness Group

Issues and Trends

Varroa continued to spread throughout the lower North Island after movement controls were relaxed and is now everywhere in the North Island. Varroa is capable of killing beehives if not treated. The costs of monitoring and treating varroa using registered miticide strips (Apistan, Apivar and Bayvarol) are significant and can cost \$12-\$24/hive/year or more, depending on the severity of infestation. This does not include the transport and labour costs associated with placing the strips in the hives, removing them after six to eight weeks' treatment, and monitoring their effectiveness. More organic treatments, such as thymol and food grade mineral oil were submitted for registration during the year. Authorities are keen to support the registration of as many chemicals and organic treatments as possible to try and prevent varroa developing resistance to any one chemical group. The US has had enormous bee losses during their past winter, with 30-80% of hives allegedly dying as a result of chemical resistant varroa and associated viruses.

The government implemented a Varroa Pest Management Strategy for the South Island, after extensive consultation with stakeholders. The strategy provides for measures to prevent varroa establishing in the South Island, and is funded by levies on beekeepers and on South Island Regional Councils and Unitary Authorities. The strategy will maintain movement controls of risk products especially between the islands, generate publicity of the risks of conveying varroa to the South Island, raise awareness of the strategy, and carry out extensive surveillance of beehives in the South Island.

This new levy, along with the per apiary levy on all beekeepers, to fund the Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998, and the continuing impact of varroa, has seen beekeeper numbers decline to 2,947 from 3,208 last year. This trend is expected to continue (Table 4).

After a very difficult spring and facing an uncertain export market outlook, beekeepers are not feeling very confident. The industry is also facing importation of honey once the import protocols are finalised by Biosecurity New Zealand. With supermarkets owned by Australian interests, beekeepers fear cheap honey imports will drive down prices even further. They are also worried that it might increase the chances of introducing exotic bacteria that cause honey bee diseases.

Most city councils are in the process of reviewing their local bylaws and especially those that control beekeeping. Some councils are "bee friendly" while others are talking measures to restrict or prevent beekeeping in urban environments. Beekeepers have been vigorously defending their rights to keep bees in towns and cities subject to not causing a demonstrable nuisance to neighbours.

Table 4: Changes in New Zealand Beekeeper and Hive Statistics Since Varroa Arrived in 2000

Location	May 2000	May 2005	May 2000	May 2005
	Number of beekeepers	Number of beekeepers	Number of hives	Number of hives
Blenheim	414	284	28,443	25,966
Canterbury	727	524	60,356	55,987
Hamilton	486	213	49,863	39,117
Otago/Southland	451	350	50,823	46,566
Palmerston North	1,214	771	43,534	45,241
Tauranga	496	263	51,008	51,666
Whangarei	1,168	542	36,086	28,385
New Zealand	4,956	2,947	320,113	292,928

The Foot and Mouth alert on Waiheke Island reminded beekeepers that they are not immune in a real response, as they would be denied access to their apiaries to manage and/or feed hives, or remove them for pollination. Waiheke Island is not an intensive beekeeping area, but there are ten beekeepers with over 300 hives on 22 apiaries, including one commercial beekeeper.