2009 HORTICULTURE AND ARABLE MONITORING

PROCESS AND FRESH VEGETABLES

THIS REPORT CONTAINS THE KEY RESULTS FROM THE MINISTRY OF AGRICULTURE AND FORESTRY'S 2009 MONITORING PROGRAMME.

KEY POINTS

- Gross margins for most fresh vegetable crops fell in 2008/09 compared with the previous year. Average returns for onions, fresh potatoes and cauliflower failed to cover the direct costs of production. The main exception was the marked improvement in financial outcome for asparagus production.
- The lower gross margins for fresh vegetables were mostly caused by higher input costs and lower yields, and in some cases lower prices.
- Most process vegetable crops achieved higher gross margins in 2008/09 due to improved prices.
- Yields were below average for vegetable crops grown in the Canterbury region as a result of adverse weather conditions including a wet winter, frost and hail events in late spring, high temperatures in January, and rain in February disrupting harvest.
- High input prices for fertiliser, fuel, agrichemicals and seed increased production costs significantly.
- The incursion of the tomato/potato psyllid (*Bactericera cockerelli*) in 2006 and its associated bacterium, *Candidatus* Liberibacter solanacearum (detected in 2008) has caused significant problems for tomato, capsicum and potato growers. These growers face reduced yields and quality with additional costs for insecticide control and export compliance. Export restrictions are being managed with new compliance programmes or specific quarantine measures requested by importing countries. Successfully established integrated pest management (IPM) programmes for tomatoes have been disrupted.
- Vegetable growers are reviewing their crop mixes and seeking more profitable land use options where possible. Lower prices for fuel and fertiliser, and lower interest rates offer some reprieve for the 2009/10 season.

FINANCIAL PERFORMANCE OF PROCESS AND FRESH VEGETABLES IN 2008/09

Financial outcomes for the vegetable industry in 2008/09 were mixed. Gross margins fell for most fresh vegetable crops due to a combination of climatic, market and cost pressures (Table 1). On average, returns for onions, fresh potatoes and cauliflower did not cover the direct costs of production. The exception was a marked improvement in the gross margin for asparagus, due to improved prices. Most process crops achieved higher gross margins than in 2007/08, due also to improved prices.

The 2008/09 growing season was mixed with wet winter and spring conditions in Pukekohe and Canterbury, whilst Gisborne and Hawkes Bay experienced very dry conditions from late winter until mid to late summer.

Growing conditions were challenging over winter and into spring for Pukekohe growers. Heavy rain, hail and wind damaged early sown crops of onions and greens requiring them to be replanted or resown. Total rainfall for the year was average but the pattern has been variable, with extremes of wet and dry.

Ministry of Agriculture and Forestry
Te Manatū Ahuwhenua, Ngāherehere

TABLE 1: VEGETABLE GROSS MARGINS[1], 2007/08 AND 2008/09

YEAR ENDED 30 JUNE	2007/08 PRICE ($)	2007/08 YIELD (UNITS/HA)	2007/08 GROSS MARGIN ($/HA)	2008/09 PRICE ($)	2008/09 YIELD (UNITS/HA)	2008/09 GROSS MARGIN ($/HA)
SOUTH AUCKLAND/WAIKATO						
Asparagus (t)	2 150	4	1 795	2 850	4	4 370
Onions (t)	350	35	1 585	345	30	–1 005
Potatoes (t)	570	37	4 060	360	37	–5 600
Greens						
– Broccoli (crates)	11.90	1 000	–530	14.40	1 000	840
– Cauliflower (crates)	8.50	1 735	–740	9.40	1 735	–85
– Lettuce (crates)	8.75	3 800	3 385	8.25	3 800	340
HAWKES BAY/GISBORNE						
Squash (t)	450	14.0	1 045	500	12.5	975
Sweetcorn – process (t)	175	17.5	1 245	225	18.0	1 530
CANTERBURY						
Peas – process (t)	265	8.0	1 420	370	6.5	960
Potatoes – process (t)	165	60	2 330	230	52	2 775
Onions (t)	350	40	4 940	375	32	125

Note
1 The gross margin calculates the revenue less direct expenses for growing, harvesting and marketing the crop. It does not take account of overheads such as administration, debt servicing, tax, drawings or development, capital spending and land lease costs. These figures may vary considerably, due to individual differences such as varieties and yields. Gross margins are provided for export and local market vegetable crops over the main fresh market and process vegetable production regions.

Sources
Fruition Horticulture, AgriLINK New Zealand and Lauriston Farm Improvement Club.

Growing conditions on the east coast of the North Island were extremely dry from late winter through to mid summer, with rainfall between September 2008 and January 2009 around half of long-term averages. Early sown crops benefited from the dry conditions and warm temperatures where irrigation was available. Crops that were not irrigated had reduced yields. Canterbury experienced a wet spring, which did not affect crop establishment, however, some crops were damaged by frosts and hail. Yields were down because of dry hot summer conditions.

The price of inputs such as fertiliser and fuel were high at the start of the growing season, and impacted particularly on the production costs of early sown crops. Production costs increased by up to $1900 per hectare for some crops, most of which is attributable to high fertiliser prices. Potato and onion growers have been most severely affected as these crops have relatively high fertiliser inputs.

The cost of leasing land increased significantly in 2008/09 because of competing land uses, such as arable and dairy farming and dairy support. Pukekohe growers paid around $1800 per hectare whereas in Canterbury the cost was as much as $2500 per hectare. With the decline in world grain prices, and a significant reduction in the forecast payout for dairy farmers in 2009/10 compared with the highs of the 2007/08 season, land lease costs are expected to remain static or decline in 2009/10.

POTATOES
(FRESH AND PROCESS)

- The production area of potatoes for the year ending December 2008 was estimated to be 9949 hectares, down 6 percent compared with the previous season.
- The tomato/potato psyllid insect pest has spread to most parts of New Zealand where potatoes are grown. Growers reported yield losses of up to 30 percent in some crops as a result of damage from this pest. Overall yields were around 20 percent below the average of recent years but similar to the drought affected crops of last season.
- High temperatures in Canterbury in January affected yield of process potato crops by up to 15 percent.
- The price for fresh potatoes was $700-$800 per tonne at the start of the season but it dropped to $300–$400 per tonne later in the season when the fresh market was over supplied with rejects from the process crop. The average price received for fresh potatoes was $360 per tonne.
- Processors increased the price paid to growers by almost 40 percent to an average of $230 per tonne in order to secure supply against alternative, more profitable land use options.
- Input costs increased by around $1890 per hectare in Pukekohe and $1615 per hectare in Canterbury, mainly attributable to higher fertiliser prices.
- A combination of below average yields, increased costs and lower prices resulted in a significant loss of income for fresh potato growers of $5600 per hectare.
- Improved prices compensated for lower yields and higher input costs for process potato growers with gross margins rising almost 20 percent on last season to $2775 per hectare.

TABLE 2: PRODUCTION, PRICE, GROSS MARGIN AND EXPORT DETAILS FOR POTATOES

YEAR ENDED 30 JUNE	2004/05	2005/06	2006/07	2007/08	2008/09
Estimated planted area (ha)[1]	11 717	11 289	10 534	10 605	9 949
FRESH POTATOES (SOUTH AUCKLAND/WAIKATO)					
Yield (t/ha)	45	45	45	37	37
Price ($/t)	285	330	330	570	360
Total costs[2] ($/ha)	13 400	15 235	15 890	17 030	18 920
Gross revenue ($/ha)	12 825	14 850	14 850	21 090	13 320
Gross margin ($/ha)[3]	–575	–385	–1 040	4 060	–5 600
Export volume (t)	26 722	26 157	26 017	26 930	26 494
Export value ($m FOB)	12.0	11.1	13.5	16.7	15.7
PROCESSED POTATOES (CANTERBURY)					
Yield (t/ha)	65	65	60	60	52
Price ($/t)	170	170	165	165	230
Total costs ($/ha)	7 450	8 310	7 160	7 570	9 185
Gross revenue ($/ha)	11 050	11 050	9 900	9 900	11 960
Gross margin ($/ha)[3]	3 600	2 740	2 740	2 330	2 775
Export volume (t)[4]	58 308	63 713	85 672	70 024	75 278
Export value ($m FOB)[4]	54.3	59.5	80.5	63.7	81.0

Notes
1 Planted area as at 31 December.
2 Fresh potato costs are higher than for process potatoes as the fresh potato grower pays for washing, grading and packing their crop. The 2004/05, 2005/06 and 2006/07 costs have been adjusted up from previously published figures to account for the cost of packaging which was added to the gross margin model in 2007/08.
3 The gross margin calculation does not include land lease costs.
4 Figures given are for frozen potatoes.

Sources
Statistics New Zealand, Horticulture New Zealand, Fruition Horticulture (BoP) Ltd.

ONIONS

- The area planted in onions was estimated at 4657 hectares for the year ending December 2008, down 5 percent on the previous year's planting.
- Hail, rain and cold winds reduced germination rates of early sown onion crops in Pukekohe and the Waikato and a number of crops had to be re-sown. Planting in Hawkes Bay, Manawatu, Horowhenua and Canterbury was delayed because of wet weather and storms. Poor weather conditions in Canterbury during February disrupted harvest.
- Yields were lower this season, down 14 percent in the Pukekohe region to 30 tonnes per hectare and down 20 percent in Canterbury to 32 tonnes per hectare. Yields varied plus or minus 12 tonnes per hectare around these averages depending on variety choice and access to irrigation.
- Large onion crops in the UK and the Netherlands, and weakened consumer demand, reduced export volume and prices for New Zealand onions in traditional markets in the UK and continental Europe. In the year to June 2009, export volume dropped by 21 percent with a 17 percent reduction in value when compared with the previous year. Some of the 2009 crop is being stored to spread the supply interval, with the hope that prices will lift.
- The net result for Pukekohe growers is a loss of around $1000 per hectare. Canterbury growers managed to achieve a small positive gross margin of $125 per hectare.

TABLE 3: PRODUCTION, PRICE, GROSS MARGIN AND EXPORT DETAILS FOR ONIONS

YEAR ENDED 30 JUNE	2004/05	2005/06	2006/07	2007/08	2008/09
Estimated planted area (ha)[1]	4 993	4 300	4 855	4 912	4 657
PUKEKOHE					
Yield (t/ha)	40	35	35	35	30
Price ($/t)	220	350	440	350	345
Total costs ($/ha)	10 130	10 620	11 780	10 665	11 355
Gross revenue ($/ha)	8 800	12 250	15 400	12 250	10 350
Gross margin ($/ha)[2]	–1 330	1 630	3 620	1 585	–1 005
CANTERBURY					
Yield (t/ha)	40	40	40	40	32
Price ($/t)	200	300	425	350	375
Total costs ($/ha)	8 800	9 540	10 450	9 060	11 875
Gross revenue ($/ha)	8 000	12 000	17 000	14 000	12 000
Gross margin ($/ha)[2]	–800	2 460	6 550	4 940	125
Export volume (t)	161 255	152 217	185 894	165 555	130 634
Export value ($m FOB)	61.6	77.7	120.5	91.5	76.3

Notes
1 Planted area as at 31 December.
2 The gross margin calculation does not include land lease costs.

Sources
Statistics New Zealand, Horticulture New Zealand, Fruition Horticulture (BoP) Ltd.

SQUASH

- Crop establishment, scheduling and yields were affected by extended dry conditions in both Gisborne and Hawkes Bay. Production was most affected in the Gisborne area where fruit was only of average quality and up to 25 percent of the crop was unsuitable for export.
- Higher prices were paid for fertiliser, fuel, agrichemicals and labour. However, because of the reduced yields, total production costs per hectare were similar to last year as the lower yield reduced yield-related costs such as packing and grading.
- Export statistics for the year ending June 2009, which includes the bulk of the 2009 export crop show a 13 percent increase in export earnings per tonne to $790 free on board. Growers' expectations of export earnings for the 2009 crop were higher because of the depreciation of the New Zealand dollar. However, rising unemployment in Japan and Korea as a result of the global recession weakened consumer demand for squash in these main export markets, depressing market prices.
- The net result for the season is a reduction in gross margin of 7 percent to $975 per hectare.
- Some growers are reviewing their involvement in squash production, particularly those who lease land. It is expected that a number will cease squash production in favour of more profitable land use options.

TABLE 4: PRODUCTION, PRICE, GROSS MARGIN AND EXPORT DETAILS FOR SQUASH

YEAR ENDED 30 JUNE	2004/05	2005/06	2006/07	2007/08	2008/09
Estimated planted area (ha)[1]	8 125	6 300	8 042	6 700	6 601
Yield (t/ha)	13.0	13.0	14.0	14.0	12.5
Price ($/t)	400	400	400	450	500
Total costs ($/ha)	4 230	4 255	4 590	5 255	5 275
Gross revenue ($/ha)	5 200	5 200	5 600	6 300	6 250
Gross margin ($/ha)[2]	970	945	1 010	1 045	975
Export volume (t)	106 004	79 545	115 238	100 272	87 792
Export value ($m FOB)	72.1	55.2	66.0	69.8	69.3

Notes
1 Planted area as at 31 December.
2 The gross margin calculation does not include land lease costs.

Sources
Statistics New Zealand, Horticulture New Zealand, Fruition Horticulture (BoP) Ltd.

GREENS

› Seasonal growing conditions for green crops were challenging. Large areas had to be replanted after widespread late winter/early spring rains and floods caused damage to young crops. However, simultaneous replanting led to oversupply issues and downward pressure on prices. Summer demand for cauliflower was very low and some crops were ploughed in.

› Input costs increased by 4 to 9 percent compared with 2007/08. Despite price increases, gross margins per hectare remain modest for broccoli and lettuce and below the cost of production for cauliflower.

TABLE 5: PRODUCTION, PRICE AND GROSS MARGIN DETAILS FOR GREENS

YEAR ENDED 30 JUNE	2004/05	2005/06	2006/07	2007/08	2008/09
BROCCOLI					
Yield (crates/ha)	1 000	1 000	1 000	1 000	1 000
Price ($/crate)	16.50	16.00	16.00	11.90	14.40
Total costs ($/ha)	11 870	11 290	12 435	12 430	13 560
Gross revenue ($/ha)	16 500	16 000	16 000	11 900	14 400
Gross margin ($/ha)[1]	4 630	4 710	3 565	–530	840
CAULIFLOWER					
Yield (crates/ha)	1 734	1 735	1 735	1 735	1 735
Price ($/crate)	10.00	7.00	10.00	8.50	9.40
Total costs ($/ha)	13 470	12 625	15 070	15 488	16 395
Gross revenue ($/ha)	17 340	12 145	17 350	14 748	16 310
Gross margin ($/ha)[1]	3 870	–480	2 280	–740	–85
LETTUCE					
Yield (crates/ha)	3 544	3 800	3 800	3 800	3 800
Price ($/crate)	8.00	8.50	9.00	8.75	8.25
Total costs ($/ha)	24 022	25 855	30 250	29 865	31 010
Gross revenue ($/ha)	28 352	32 300	34 200	33 250	31 350
Gross margin ($/ha)[1]	4 330	6 445	3 950	3 385	340

Note
1 The gross margin calculation does not include land lease costs.

Sources
Statistics New Zealand, Horticulture New Zealand, Fruition Horticulture (BoP) Ltd.

ASPARAGUS

- The asparagus industry has had a significant turn around in profitability this season, with the gross margin improving by 144 percent.
- The industry average yield is 4 tonnes per hectare, but yields are variable, depending on variety and cut spear length; 18 cm for process supply and 23 cm for fresh market. New New Zealand-bred *Phytophthora* resistant asparagus varieties are coming into production and some growers are reporting yields of 9 tonnes per hectare for these varieties.
- Returns for both export and process product lifted during the season. Depreciation of the New Zealand dollar against the Japanese yen provided opportunities for an increase in asparagus exports to Japan. As a result, export volumes for the year to June 2009 increased by 13 percent to 433 tonnes with a value of $4.1 million.
- Average grower price for fresh asparagus was $2.85 per kilogram, an increase of 33 percent on the previous season. Processors increased the price paid to growers by 33 percent, to $2.75 per kilogram, to secure supply.
- Harvest costs were higher this season because of the increase in the minimum wage rate but, with the increased returns, growers made an average gross margin of $4370 per hectare.

TABLE 6: PRODUCTION, PRICE, GROSS MARGIN AND EXPORT DETAILS FOR ASPARAGUS

YEAR ENDED 30 JUNE	2004/05	2005/06	2006/07	2007/08	2008/09
Estimated planted area (ha)[1]	1 350	810	690	690	616
Yield (t/ha)	5	6	4	4	4
Price ($/t)	2 300	2 300	2 300	2 150	2 850
Total costs ($/ha)	8 990	10 290	7 080	6 805	7 030
Gross revenue ($/ha)	11 500	13 800	9 200	8 600	11 400
Gross margin ($/ha)[2]	2 510	3 510	2 120	1 795	4 370
Export volume (t)[3]	917	804	553	382	433
Export value ($m FOB)[3]	5.4	5.2	3.6	2.5	4.1

Notes
1 Planted area as at 31 December.
2 The gross margin calculation does not include land lease costs.
3 Figures given are for fresh asparagus.

Sources
Statistics New Zealand, Horticulture New Zealand, Fruition Horticulture (BoP) Ltd.

PROCESS CROPS

- The growing season was challenging for most process crop growers. A dry winter led to low spring soil moisture levels in the Gisborne region and the season remained dry until January. Rainfall in January averted major yield reductions, particularly in sweetcorn. Spring and summer were also drier than average in Hawkes Bay with high summer temperatures causing heat stress even in irrigated crops. Growers planting new high yielding sweetcorn varieties with the ability to irrigate were able to produce yields of 24 tonnes per hectare. Average yields were 18 tonnes per hectare.
- Canterbury growers had to replant some process pea crops that were damaged by frost or hail at the start of the season. Poor crop establishment and dry growing conditions negatively impacted on yield. Yields for process peas were down on the previous season by 20 percent.
- Process crop growers faced strong competition for irrigable land around the country at the start of the 2008/09 season and as a result, processors lifted their prices to secure supply. Process pea prices increased by 40 percent and process sweetcorn by 28 percent.
- Growers of all process crops faced higher costs in 2008/09, particularly higher fertiliser and seed costs.
- The gross margin for process sweetcorn increased by 23 percent compared with 2007/08 as a result of increased prices and average yields.
- Increased prices could not compensate for reduced yields of process peas, resulting in a drop in gross margin per hectare of 32 percent compared with last season.
- Broomcorn millet has become a persistent weed problem in sweetcorn crops, actively competing with the crop. Industry has secured funding from the MAF Sustainable Farming Fund to develop management strategies for controlling this weed.
- Export volumes of frozen peas and sweetcorn declined in the year to June 2009 but export earnings per tonne increased, assisted by favourable movements in exchange rates.

TABLE 7: PRODUCTION, PRICE, GROSS MARGIN AND EXPORT DETAILS FOR PROCESS CROPS

YEAR ENDED 30 JUNE	2004/05	2005/06	2006/07	2007/08	2008/09
PROCESS PEAS (CANTERBURY)					
Yield (t/ha)	7.0	6.5	8.0	8.0	6.5
Price ($/t)	260	330	265	265	370
Total costs ($/ha)	910	915	725	1 480	1 445
Gross revenue ($/ha)	1 820	2 145	2 120	2 900[1]	2 405
Gross margin ($/ha)[2]	910	1 230	1 395	1 420	960
Export volume (t)[3]	34 120	40 632	32 952	41 875	31 316
Export value ($m FOB)[3]	36.6	45.9	42.0	56.0	49.8
PROCESS SWEETCORN (HAWKES BAY/GISBORNE)					
Yield (t/ha)	17.0	19.0	18.0	17.5	18.0
Price ($/t)	150	150	170	175	225
Total costs ($/ha)	1 500	1 565	1 775	1 820	2 520
Gross revenue ($/ha)	2 550	2 850	3 060	3 065	4 050
Gross margin ($/ha)[2]	1 050	1 285	1 285	1 245	1 530
Export volume (t)[4]	24 438	24 194	19 500	24 270	17 459
Export value ($m FOB)[4]	36.5	38.9	31.2	38.3	32.0

Notes
1 Gross revenue in 2007/08 includes income from pea vine bales.
2 The gross margin calculation does not include land lease costs.
3 Figures given are for frozen peas.
4 Figures given are for frozen sweetcorn.

Sources
Statistics New Zealand, Horticulture New Zealand, Fruition Horticulture (BoP) Ltd.

COVERED CROPS

- Exports of fresh tomatoes and capsicums were suspended in June 2008 due to the discovery of *Candidatus* Liberibacter solanacearum, a plant pathogenic bacterium new to New Zealand. Access to export markets has been re-established but is subject to new disinfestation and access procedures. However, during the period when exports were suspended, fruit destined for export was supplied to the domestic market leading to oversupply and depressed prices.
- Increases in energy, fertiliser and labour costs have impacted on profitability. Growers using LPG for heating experienced cost increases of up to 100 percent over the season.
- The volume and value of fresh tomato exports increased in the year ending 30 June 2009, despite export restrictions early in the year. Export volumes increased by 12 percent against the previous year whilst export earnings increased by 18 percent, averaging $2.95 per kilogram free on board.
- Whilst export volumes of capsicums dropped by 20 percent in the year to June 2009, export returns increased from $4.85 to $7.17 per kilogram free on board compared with the previous year, assisted by favourable movements in the exchange rate.

INDUSTRY ISSUES AND DEVELOPMENTS

GROWER MORALE AND BUSINESS VIABILITY PLANS

Generally morale is low amongst fresh vegetable growers, as returns for many crops are barely covering production costs, let alone contributing to fixed costs. Increased production costs for processed growers were offset by price increases and most achieved an improved financial outcome in 2008/09.

Growers of most vegetable crops are considering their options due to rising costs and lack of significant price increases. Many are reconsidering their production mix, moving away from the less profitable options where possible. On a positive note, growers are anticipating that growing costs will reduce in 2009/10, as a result of lower fertiliser and fuel prices.

GROWER RESPONSE TO INPUT PRICES AND SHORTAGES

The Recognised Seasonal Employer (RSE) scheme continues to provide workers to overcome seasonal labour shortages. Attracting suitable people into horticulture related employment is a continuing challenge for growers despite rising unemployment levels.

ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT

Growers are concerned that their "toolbox'" of options for pest and disease management is being depleted, often with little time to develop alternative strategies. In January 2009, the Environmental Risk Management Authority (ERMA) imposed a prohibition on endosulfan, giving growers just over a month to come up with alternatives. Other pesticides used by the vegetables sector are likely to come up for review in the short to medium-term.

The cost of registration for new plant protection products is often prohibitive for crops grown in small volumes. Off-label use is an option, but use must be managed so that residues do not exceed the default maximum residue level (MRL) of 0.1 mg/kg.

Growers are actively seeking ways to reduce on-farm energy use to provide cost savings and reductions to their carbon footprint. Onions New Zealand, with support from the MAF Sustainable Farming Fund, is determining the carbon footprint of New Zealand onions exported to markets in Europe. This project will improve understanding of energy use across the supply chain and identify emission "hot spots" in the onion life cycle.

A range of environmental and resource management research is in progress in the vegetable sector including:

- Holding it all together – soils for sustainable vegetable cropping (SFF 08/116);
- Using advanced technology to develop sustainable cropping systems (SFF C08/111).

Both of these projects address sustainable cropping practices for intensively cropped soils.

BIOSECURITY

Biosecurity is an area of high importance and concern to vegetable growers. The tomato/potato psyllid (*Bactericera cockerelli*), which vectors the plant pathogen *Candidatus* Liberibacter solanacearum are probably the most significant pest incursions the vegetable industry has faced in recent history. This insect pest that vectors the disease was first detected in New Zealand in March 2006 in South Auckland. Since then it has spread to most parts of New Zealand although it seems to be more prevalent in the North Island than the South Island. Host crops for the pest include vegetable and weed species belonging

to the *Solanaceae* family, including potatoes, tomatoes and capsicums. Infested crops of outdoor potatoes and tomatoes in 2008/09 had lower yields and reduced quality.

Growers have had to resort to the use of broad spectrum insecticides to control the tomato/potato psyllid. Insecticide applications for process tomatoes have increased from less than one insecticide application per season to up to eight.

The presence of this new pest is impacting significantly on previously successful IPM programmes in greenhouse tomatoes and capsicums. The increased use of insecticides is having a damaging effect on the biological control agents relied on in IPM programmes and on bumble bees used for pollination. All growers have health and safety concerns around the increased insecticide use.

The process potato industry is concerned about the potential impact of Liberibacter on tuber quality. The bacterium is believed to be the cause of symptoms known as "Zebra chip" in potato tubers due to the conversion of starch to sugars, and the resulting Maillard browning reaction that occurs in products cooked at very high temperatures. Infections are difficult to identify in the field and processors have introduced a frying test as part of the pre-acceptance quality tests for the crop. A number of lines were rejected in the 2008/09 season.

Funding from Horticulture New Zealand and the MAF Sustainable Farming Fund in 2008 provided monitoring results on the tomato/potato psyllid for industry and information on identification, scouting methods and spray programmes for commercial and home growers. A new three year project, beginning this year, aims to develop sustainable management programmes for the pest. A biological control agent for the tomato/potato psyllid is currently in containment awaiting the necessary approval to be released for trials.

FURTHER INFORMATION

For more information please contact Diana.Mathers@maf.govt.nz.

PUBLISHER

Ministry of Agriculture and Forestry
PO Box 2526, Wellington 6140, New Zealand
Tel +64 4 894 0100 or Freephone 0800 008 333
Email: policy.publications@maf.govt.nz
Web: www.maf.govt.nz

ISBN 978-0-478-35161-3 (Online)

This report can be downloaded from www.maf.govt.nz

New Zealand Government