2009 HORTICULTURE AND ARABLE MONITORING

APICULTURE

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

KEY POINTS

- Revenue for most apiculture operations increased in 2008/09 compared with 2007/08, due to a record honey crop and increased prices.
- New Zealand beekeepers experienced a new record honey crop of 12 565 tonnes in 2008/09, with production in most regions above their six-year average.
- Export returns increased for most honey products due to higher prices and favourable movements in the exchange rate. The most significant price increase was for clover honey, up an average $1.50 per kilogram free on board. Industry commentators expect similar or better honey prices in 2009/10 as global demand exceeds supply.
- Live packaged bee exports to Canada were up 25 percent compared with last season, reflecting increased world honey prices as well as winter colony losses in Canada.
- Sugar prices increased by 50 percent during 2008/09 due to reduced supplies; high sugar prices are expected into spring 2009.
- Varroa was found in Canterbury outside the varroa Control Area. This resulted in the disestablishment of movement restrictions on risk goods, including inter-island movements.

TABLE 1: NEW ZEALAND HONEY CROP, 2004 TO 2009

YEAR ENDED 30 JUNE	2004 (T)	2005(T)	2006 (T)	2007 (T)	2008 (T)	2009 (T)	6 YEAR AVERAGE (T)
Northland/Auckland/Hauraki Plains	1 047	1 221	1 337	1 252	1 186	1 756	1 300
Waikato/King Country/Taupo	1 164	1 095	1 124	1 270	1 436	1 864	1 326
Bay of Plenty/Coromandel/Poverty Bay	2 052	1 498	1 937	1 897	2 492	2 250	2 021
Hawkes Bay/Taranaki/Manawatu/Wairarapa	1 330	1 440	1 935	1 912	2 755	2 082	1 909
Marlborough/Nelson/Westland	550	800	690	675	966	1 140	804
Canterbury	1 500	1 500	2 100	1 620	1 980	1 718	1 736
Otago/Southland	1 245	2 135	1 300	1 040	1 560	1 755	1 506
New Zealand	**8 888**	**9 689**	**10 423**	**9 666**	**12 375**	**12 565**	**10 601**
Yield/hive (kg)	30.2	33.1	34.7	30.7	36.0	34.7	33.3

Source AsureQuality Limited.

FINANCIAL PERFORMANCE OF APICULTURE IN 2008/09

The financial performance of much of the apiculture sector improved in 2008/09 due to the honey crop setting a new yield record and higher prices for all honey types.

REVENUE UP

The best returns continue to be from pollination, manuka honey production and live bee exports. Significant price improvements also occurred for clover honey in 2008/09 with returns up 25–50 percent compared with 2007/08 levels.

RECORD HONEY CROP BUT YIELDS FOR DIFFERENT HONEY TYPES VARIED

The New Zealand honey crop for 2008/09 is estimated at 12 565 tonnes (a new national record), up 190 tonnes (1.5 percent) on the 2008/09 honey crop and 18.5 percent higher than the six-year average.

Regional honey production figures for the past six years are summarized in Table 1. All areas, except Canterbury reported total honey crops at levels above their six-year average. Waikato, King Country and Taupo reported one of their best seasons, with honey crops 40 percent above their six-year average. This was a consequence of a dry and warm late spring/summer in 2008/09 enabling an early start to the season.

National average production per hive was 34.7 kilograms per hive, 1.3 kilograms less per hive than in 2007/08. However, this result would have been affected by the extra 18 500 hives registered in 2008. The trends in average honey yields per hive are shown in Table 1.

Bee colonies came through the very wet winter in reasonably good condition, and a dry, mild and sunny September allowed beekeepers to complete their spring management, and get early queen bees mated. However, the end of September brought unsettled weather to some regions with heavy wind storms to the lower North Island and the east of the South Island, floods in Taranaki and snow to low levels in Otago and Southland. This affected the main mating period for queen bees in these regions and some beekeepers struggled to get hives up to strength for early pollination.

Over the year, the climate swung from La Nina to neutral and then back to La Nina, resulting in warm settled conditions with below average rainfall in many areas and above average sunshine hours especially in the South Island and Hawkes Bay. November to December were dry and sunny months and rainfall was less than 50 percent of average in eastern areas, and between 50 to 80 percent of average for the majority of the North Island. This affected pasture honey crops in the east coast of the North Island and in areas of Canterbury and Otago. The dry warm weather saw an early start to the Waikato honey crop, with favourable conditions continuing into January.

Manuka honey yields were down over the whole country. Northland, the east coast of the North Island and the South Island all reported below average yields of manuka while the rest of the country only reported average yields. Other bush sources such as rewarewa, kamahi and tawari yielded good crops of honey. These tree sources flowered early in response to good spring conditions and foraging weather was favourable. Settled late autumn weather helped produce a good crop of honeydew from the beech forests in the South Island.

HONEY PRICES UP

Prices paid to beekeepers for most lines of honey rose in 2008/09, as a result of higher export returns (in New Zealand dollar terms). Increases in world honey prices, evident towards the end of 2007, continued throughout 2008 due to ongoing world demand for honey and lower international supplies. Increased honey prices paid to New Zealand beekeepers are a reflection of favourable movements in the New Zealand dollar against the main trading currencies as well as actual price increases. New Zealand aims to export at least 30-40 percent of the honey it produces to ensure price stability in the domestic market which absorbs around 5000 tonnes of honey each year.

World prices for bulk honey started to increase during the latter half of 2007 as a result of adverse weather conditions reducing honey crops in some of the major honey exporting countries, including Argentina, Uruguay, China, Australia and the United States (US). Continued hive losses in the US due to Colony Collapse Disorder (CCD) is also affecting supply and a number of US beekeepers are choosing not to export, instead selling their crop on the more profitable local market, or holding supply in the hope of increased returns.

The global recession has resulted in demand switching from the more expensive white honeys to the cheaper light and medium amber grades. This has resulted in increased demand for these types of honey from New Zealand, particularly clover honey. Export returns for clover honey ranged from $3.50 to $5.60 per kilogram free on board in 2008/09, up an average $1.50 per kilogram over the returns of recent years (Table 2).

The high-end specialty markets for New Zealand unique floral sources and antibacterial honey such as manuka maintained good prices throughout 2008/09 and appear unaffected by the global recession. The bulk price for non-active[1] manuka honey opened at around $7–$11 per kilogram for early sales but quickly rose to $11.50–$12.00 per kilogram. In comparison, the bulk price for active manuka ranged from $12.50–$56.00 per kilogram, depending on activity level. Only small amounts of very high activity manuka honey are available.

International industry commentators are expecting world honey prices to remain high and stable throughout the remainder of 2009 and into 2010, due to continuing shortages in world supplies of honey compared with demand.

Prices for a range of honey types as well as other apiculture products are summarised in Table 2.

RECORD EXPORT VOLUMES FOR HONEY IN 2008/09

New Zealand exported 7384 tonnes of honey in the year to June 2009 to over 30 countries, a record export volume for New Zealand. The UK remains the main market for honey exports, receiving 38 percent of export volumes in 2008/09. Sales of New Zealand honey to China are a recent and growing phenomenon, helped by the signing of the Free Trade Agreement in April 2008 which reduced import tariffs. There is potential for New Zealand exporters to build on the Chinese market with an increasing interest from affluent Chinese consumers in the quality of New Zealand honey products.

Brazil is emerging as a new exporter on the world market for darker grades of honey. Their crop goes to Germany or the United States depending on the relative cross rate between the euro and the US dollar. India is also emerging as a significant honey exporter.

OTHER REVENUE SOURCES

POLLINATION

Kiwifruit pollination fees increased only slightly compared with last year as many beekeepers sought to protect contracts they had from competitors, believing kiwifruit growers were unable to absorb further fee increases.

Prices ranged from $115 to $160 per hive, depending on the level of service provided (including placement of hives in the orchard and sugar syrup feeding), ease of access and payment arrangements. Pollination fees for gold kiwifruit (Hort16A) tend to be less than the green variety as pollination occurs in October to November, a month earlier than green kiwifruit. This gives beekeepers the option of using the same hives for pollinating both gold and green kiwifruit orchards or moving to a rewarewa or early manuka honey flow.

Prices for pollinating canola increased $20 per hive in 2008/09 and ranged from $120–$140 per hive. There is growing interest in growing canola for biofuel with Biodiesel New Zealand indicating projected plantings of 20 000–30 000 hectares of canola for biodiesel production. With a stocking rate of one hive per hectare of canola planted, this could represent a significant opportunity for New Zealand beekeepers.

Hives for carrot pollination increased by $30 per hive to a maximum of $180 per hive. This is a reflection of the high value of carrot seed crops, but also the reduced income potential to beekeepers. Hives on carrot pollination produce only maintenance honey crops and are also exposed to potential damage from pesticides and irrigation systems.

1 The "activity" of manuka honey is based on the non-hydrogen peroxide activity and is expressed as points of activity using phenol as a reference point. Points of activity payments usually begin when the honey scores over ten points. An alternative method used by one exporter reports on the level of methylglyoxal, an antibiotic compound.

TABLE 2: RETURNS FOR APICULTURE PRODUCTS, 2007 TO 2009

YEAR ENDED 30 JUNE	2006/07	2007/08	2008/09
BULK HONEY[1]– COLOUR GRADE ($/KG FOB[2])			
Light (clover type)	2.20–3.90	2.80–3.75	3.50–5.60
Light amber	3.50–3.90	2.80–3.00	3.70–4.00
Honeydew – rewarewa	2.90–3.90	2.80–3.70	4.50–5.00
Thyme			6.00–7.00
Tawari–Kamahi			3.65–5.00
Manuka[3]	8.50–11.50	8.50–13.25	7.00–12.00
Active manuka		12.10–45.00	12.50–56.25
BEESWAX ($/KG FOB): RESIDUE FREE			
Light	6.00–6.50	6.50–7.00	7.00–8.10
Dark	4.50–5.20	5.00–5.20	4.00–5.20
POLLEN ($/KG FOB)			
Not dried or cleaned	14.00–16.00	16.00–18.00	18.00–20.00
Cleaned and dried	20.00–35.00	20.00–30.00	25.00–31.00
PROPOLIS($/KG FOB)			
Purity 15–19%			160.00
Purity 20–24%			190.00
Purity greater than 25%			230.00
POLLINATION ($/HIVE)			
Pipfruit, stonefruit and berryfruit	60.00–90.00	60.00–96.00	55.00–96.00
Kiwifruit[4]			
– Hawkes Bay	110.00–150.00	110.00–170.00	140.00–160.00
– Auckland/Waikato	100.00–185.00	110.00–150.00	115.00–150.00
– Bay of Plenty	102.00–175.00	110.00–160.00	
Gold kiwifruit (Hort16A)			110.00–145.00
Green kiwifruit (Hayward)			130.00–160.00
– Nelson	100.00–120.00	100.00–120.00	125.00–145.00
Canola and other brassicas	120.00	120.00	120.00–140.00
Carrots		150.00	150.00–180.00

Notes
1 Beekeepers supply drums or containers.
2 Free on board.
3 Non-active manuka honey.
4 Prices at the lower end of the range are for hives delivered to depot sites. At the upper end, prices include delivery into the orchard and sugar for three 1.5 litre sugar syrup feeds to stimulate the bees to collect pollen.

Source
AsureQuality Limited.

TABLE 3: ESTIMATE OF EXPENDITURE ITEMS FOR BEEKEEPING OPERATIONS, 2008/09

LABOUR	Worker Manager Average working week Ratio of hives per full time equivalent (FTE)	$15–$25 per hour $27–$35 per hour Bonuses are also common 45 hours 450:1 or less (800:1 pre-Varroa)
FUEL	Variable	
SUGAR	Non-pollination hives may need 25–35 kilograms per year	 $27–$42 per hive per year $1100–$1200 per tonne
POLLEN SUBSTITUTE	Hives may require 1¬1.5 kilogram per season	$145 per 20 kilogram bag $11 per season per hive
HIVES	New[1] Second-hand Includes two brood boxes and 1–2 honey boxes Repair and maintenance Wax to coat plastic frames Hive Strappers (number used as required)	$160 $150–$250 $11–$17 per hive (7% of hive purchase price) $6–$8 per kilogram $12-$14 each
BEES	Queen bees Select queens Select tested breeder queens	$25–$31 $60–$120 $600–$1250
VARROA TREATMENT (MITICIDES STRIPS)	Variable on colony strength	$11–$12 per hive
PROTECTIVE CLOTHING	Single piece suit	$147–$156
HONEY DRUMS	Holds 300 kilogram of honey	$65–$75
HONEY EXTRACTION		$1.00–$1.50 per frame
STORAGE	Honey drums Honey supers	$1 per day $1 per day/or week
APIARY RENTAL FEES	Variable	Free–25% of extracted crop
COMPLIANCE COSTS	Manuka honey antibacterial test Risk management programme RMP annual audit fee Risk management programme + storage premises fee Risk management programme NZFSA annual fee Compliance with Food (Tutin in honey) Standard 2008 American foulbrood strategy levy	$45 per test up to $1150 up to $750 $542 $125–$169 per sample $20 per beekeeper $10.50 per apiary
NATIONAL BEEKEEPING ASSOCIATION MEMBERSHIP (VOLUNTARY)	Hobby beekeeper Large commercial operator Beekeeping Industry Group subscription	$135 $4500 $350–$450

Note
1 Does not include bees or feeding to get established.

Source
AsureQuality Limited.

LIVE BEES

Prices for live bees held steady in 2008/09 with exporters paying around $22 per kilogram for bees and $25 per queen. Over 30 000 one kilogram packages of bees were sent to Canada in 2008, along with 3000 extra queens surpassing the record set in 2007 by 25 percent. Canada's record import of New Zealand bees is a reflection of recent lifts in world honey prices and a favourable exchange rate with the US dollar.

A small number of queen bees were sent to the UK but difficulties in complying with European Union (EU) certification requirements meant there were no package bee exports to Europe.

POLLEN, PROPOLIS AND BEESWAX

Pollen production continues to decline, with only a small amount of producers remaining in the North Island. Pollen cannot be trapped in hives while they are in orchards for pollination, on a heavy nectar flow or being treated for varroa. This leaves little opportunity to collect pollen commercially. Increasing fuel and labour costs are limiting the financial viability of pollen collection, as traps need to be serviced every three days during the collection period.

Prices paid for pollen increased by around $2 per kilogram in 2008/09, but prices for propolis and dark beeswax remained static. Demand for light coloured beeswax and organic wax remains strong. Buyers are now very discerning about wax and propolis that has come from hives treated for varroa control with miticides containing fluvalinate with differential payment schedules for products from treated and non-treated hives.

EXPENDITURE INCREASING

The main expenditure increases during 2008/09 were for sugar and honey drums. Increases in extraction fees, freight, compliance costs, and labour also contributed to an overall increase in expenditure. Table 3 provides a list of expenses giving an estimate of many of the major costs incurred by beekeepers.

INCREASE IN THE UNIT PRICE OF ESSENTIAL INPUTS

Sugar prices rose nearly 50 percent over 2008/09. Most beekeepers secured spring supplies at around $850 per tonne; however by mid 2009, quotations had increased to $1050 per tonne. Significant price increases for sugar were a consequence of production shortfalls in India and the European Union. World sugar demand continues to increase at around 2 percent per year, outstripping supply. Hence, sugar prices in the range of $900–$1100 per tonne are expected for the remainder of 2009, impacting on the profitability of beekeeping operations.

The cost of new drums ($70–$75) and reconditioned honey drums ($65) rose during 2008/09 and are now a significant cost to producers. Many honey buyers will only accept new or reconditioned drums and not all export drums are returned for refilling. Regulators are also insisting on better quality drums that are reused by some packers who supply the local market.

Hives with varroa must be managed more intensively than hives without varroa. As varroa spreads through the South Island, beekeepers there are expected to reassess their labour costs and income opportunities, particularly as many southern beekeepers do not have access to pollination contracts or higher value manuka honey sites.

EXTRACTION FEES

Contract extraction fees of $1.15–$1.30 per frame were charged to process manuka honey which requires more processing and specialised equipment, while fees for other honey types ranged from $0.80–$1.00. Extraction fee increases during 2008/09 were due to operators factoring in the true costs of compliance documentation and production losses from their own hives while they extracted other beekeepers' honey. Increased costs for

electricity, rates and wages also contributed to the increase in extraction fees. This increase has resulted in a small number of operators setting up their own extraction and/or storage premises with concomitant costs of buildings, equipment and developing risk management programmes.

INDUSTRY ISSUES AND DEVELOPMENTS

BEEKEEPER MORALE AND BUSINESS VIABILITY PLANS

Despite a lift in prices paid for honey many beekeepers remain worried about the long term viability of their businesses. Some are down-sizing or selling up while others look to diversify their businesses. This is particularly evident in the South Island with the spread of varroa, which is expected to greatly increase operation costs and make organic beekeeping very difficult. Beekeepers remain very concerned about the importation of foreign honeys and the possible effects of exotic bee pests and diseases being introduced.

HIVE AND BEEKEEPER NUMBERS REBUILDING

Hive registration numbers have increased by around 18 500 hives to over 362 500 in 2008/09. This shows hive numbers have rebounded after an extended period of decline following the varroa incursion in 2000, and are now at their highest level ever. Most of the increase in registered hives was driven by new entrants to the commercial industry and commercial beekeepers looking to capitalise on high manuka honey prices. This was most evident in Northland, a significant manuka honey production area, where 10 000 of the additional hives were located. Hive numbers have not increased to the same degree in non-manuka honey production areas.

Beekeeper numbers rose 3 percent in 2008/09 from 2594 to 2669. This was largely due to a net increase in hobby beekeepers, which is encouraging as commercial beekeepers often emerge from this group. Details of beekeeper and hive numbers by region are provided in Table 4.

BEEKEEPER RESPONSE TO INPUT PRICE CHANGES AND SHORTAGES

The main price increases are for wages, freight charges, sugar, honey drums and plastic containers and miticides. Beekeepers are evaluating the cost of servicing distant apiaries, especially if these are not on manuka production. Some operators have pulled out of kiwifruit pollination because of the loss of manuka or rewarewa honey production, the risk of pesticide damage and the risk of hives contracting the endemic bee disease, American foulbrood. Hives infected with this disease must be destroyed by burning.

TABLE 4: NEW ZEALAND BEEKEEPER, APIARY AND HIVE STATISTICS, AS AT 31 MAY 2009

	BEEKEEPERS	APIARIES	HIVES
Northland/Auckland/Hauraki Plains	521	3 069	53 210
Waikato/King Country/Taupo	175	2 283	46 083
Coromandel/Bay of Plenty/Poverty Bay	274	3 325	67 769
Manawatu/Taranaki/Hawkes Bay/Wairarapa	565	3 736	60 458
Marlborough/Nelson/West Coast	250	1 942	28 083
Canterbury	524	3 743	52 870
Otago/Southland	360	3 452	54 067
New Zealand	**2 669**	**21 550**	**362 540**

Source
AsureQuality Limited.

Beekeepers are concerned at the increasing costs of compliance for exporting bee products and live bees, providing food safety assurances and managing risk management programmes. However, operators of risk management programmes are more accepting that there are risks associated with producing and processing bee products, and that risk management programmes are a suitable vehicle to manage these risks.

The Food (Tutin in Honey) Standard 2008 was introduced in January 2009. This standard aims to prevent honey contaminated with tutin reaching consumers. The standard applies to beekeepers, packers and exporters and will provide assurances to customers around the safety of honey products. Test costs range from $125 to $169 per sample. Honey producers can request testing laboratories to composite up to four batch samples to test for the tutin toxin. The composite test provides quite a saving provided the test result is under the maximum residue level.

The industry is discussing the development of standards defining mono-floral honey types which could add extra costs for verification and testing. In the longer term, this is likely to improve consumer confidence in honey labelling, and be a positive marketing point for exporters and retailers.

PESTS AND DISEASES

Varroa was found south and east of the Nelson Controlled Area (CA) in April 2008 and a new movement control line was gazetted to include the northern part of Westland, Buller, Tasman, Nelson, Marlborough, and part of north Canterbury. However, varroa eventually breached this line and the Controlled Area was revoked on 25 September 2008. All movement restrictions, including inter-island movement of risk products were lifted. Surveillance and beekeeper education activities continued until 30 June 2009, when MAF Biosecurity New Zealand's varroa programme officially ended.

Hives continue to be moved from the South Island to the North Island as northern beekeepers increase hive numbers or replace losses mainly due to varroa. This movement is expected to stop in two to three years time as varroa becomes established throughout the South Island.

MAF Biosecurity New Zealand is currently undertaking a review of the American foulbrood pest management strategy.

New Zealand beekeepers remain concerned that exotic bee diseases such as European foulbrood, Israeli Acute Paralysis Virus and *Nosema ceranae* may be accidentally introduced in imported honey. Following legal action by the National Beekeepers' Association, MAF set up an independent review panel of experts to assess the science around the Import Health Standard for bee products from Australia. The panel has recently reported back to the Director-General of MAF, who is considering the issues it has raised.[2]

FURTHER INFORMATION

For more information please contact Deborah.Hackell@maf.govt.nz

2 For more information see www.maf.govt.nz/mafnet/press/2009/060709-bee-imports-report.htm

PUBLISHER

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Email: policy.publications@maf.govt.nz
Web: www.maf.govt.nz

ISBN 978-0-478-35160-6 (Online)

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

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