

Embargoed until 10:45am – 09 February 2010

Agricultural Production Statistics: June 2009 (provisional)

Highlights

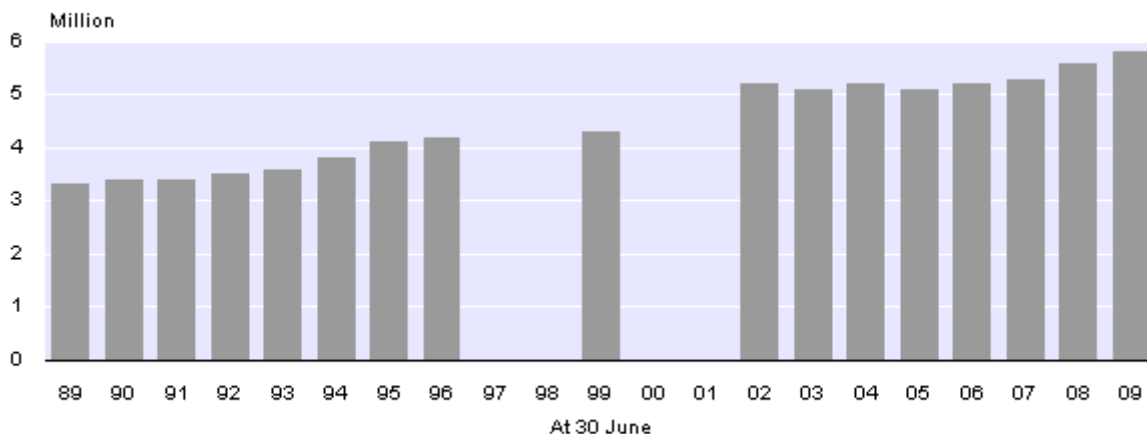
At 30 June 2009:

- Sheep numbers fell to 32.4 million, down 5 percent from 2008.
- Dairy cattle numbers reached 5.8 million, up 4 percent from 2008.
- The total area planted in wine grapes rose to 32,960 hectares, up 11 percent from 2007.

During the year ended 30 June 2009:

- 408,400 tonnes of wheat were harvested, up 19 percent from 343,400 tonnes in 2008.
- 449,800 tonnes of barley were harvested, up 10 percent from 408,700 tonnes in 2008.

Total Dairy Cattle
1989–2009



Note: No Agricultural Production Survey was conducted for 1997, 1998, or 2001. In 2000, the survey related only to horticulture.

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Commentary

The 2009 Agricultural Production Survey covered livestock and arable farming, horticulture and forestry, and included questions on farm practices (including fertiliser and cultivation). This release contains provisional results for key livestock, forestry, arable, and horticultural crops. Provisional results may change after further processing and analysis of data. Final results will be released on 13 May 2010 and will be available at regional level.

The 2009 survey was part of the current programme of censuses and surveys of agricultural production. This programme began with a census in 2002, followed by annual sample surveys from 2003 to 2006. A census was held in 2007 followed by a sample survey in 2008.

Figures in this release have been rounded. All percentages in this release have been calculated using unrounded figures.

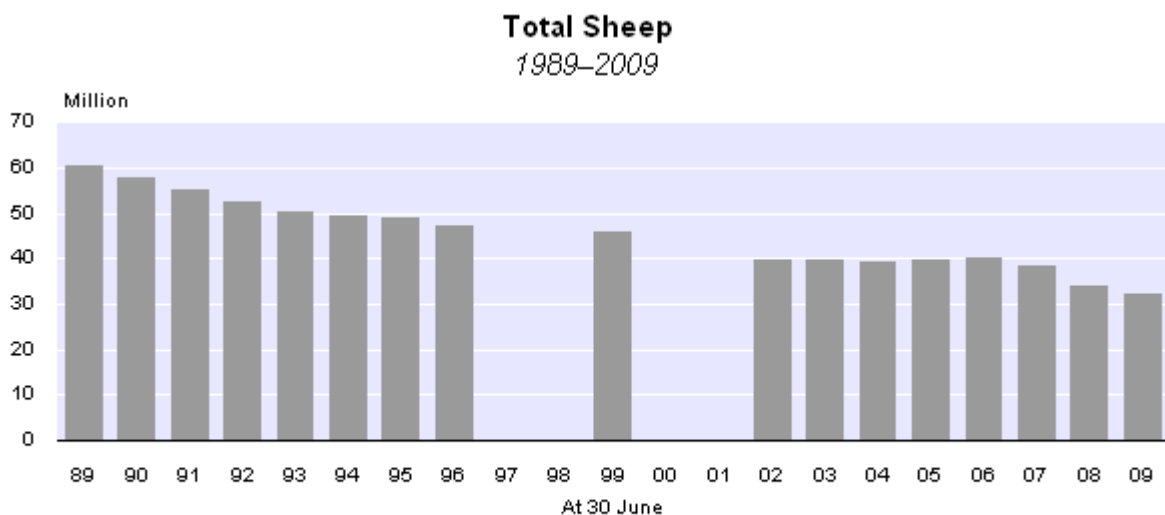
Sheep

Total sheep numbers at 30 June 2009 were estimated at 32.4 million, down 1.7 million from 34.1 million in 2008. Although sheep numbers fell in 2009, the fall was not as great as between 2007 and 2008, when numbers dropped by 4.4 million. The 2009 sheep flock was 28.2 million below the 60.6 million recorded 20 years ago in 1989, and less than half the peak of 70.0 million sheep recorded in 1982.

In the year ended 30 June 2009, 28.0 million lambs were tailed, 3.1 million fewer than in the previous year.

In 2009, 23.9 million ewes and ewe hoggets were mated, down from 25.0 million in 2008. In comparison, 42.5 million were mated in 1989.

The fall in the national breeding flock since the 1980s has been partly offset by increases in the lambing percentage. In 2009, a lambing percentage of 119 was achieved compared with 102 in 1989.



Note: No Agricultural Production Survey was conducted for 1997, 1998, or 2001. In 2000, the survey related only to horticulture.

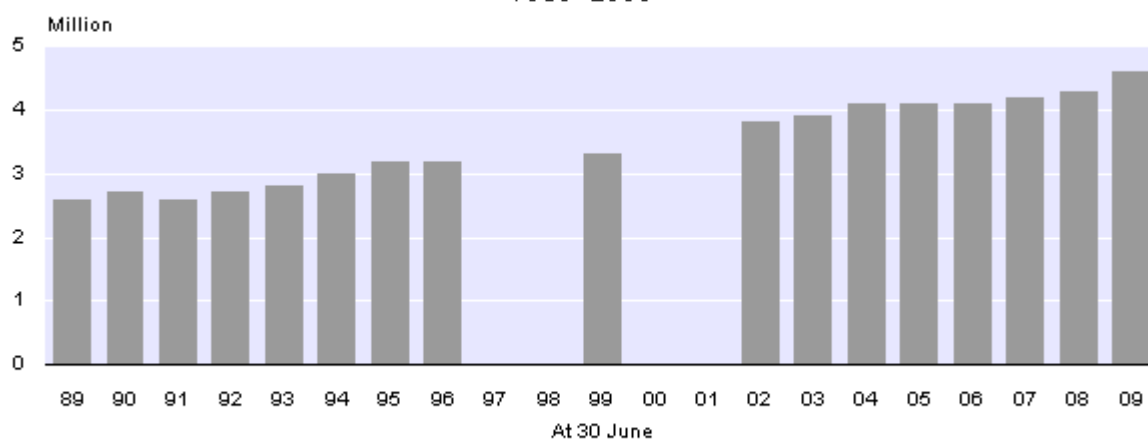
Dairy

At 30 June 2009 New Zealand had 5.8 million dairy cattle, 240,000 more than in 2008. In the past twenty years, the number of dairy cattle has increased by 76 percent from 3.3 million in 1989.

The increased number of dairy cattle in 2009 resulted from growth in the milking herd (cows and heifers in milk or in calf). The milking herd grew to 4.6 million in 2009, up from 4.3 million in 2008. This expansion was due to both dairy conversions and growth in existing milking herds. In 2009, more older cows were kept for milk production.

The 2009 dairy replacement herd (cows and heifers not in milk or in calf, and rising one-year-old heifers, and heifer calves) remained similar to the 2008 size of 1.2 million.

Dairy Cows and Heifers in Milk or in Calf
1989–2009



Note: No Agricultural Production Survey was conducted for 1997, 1998, or 2001. In 2000, the survey related only to horticulture.

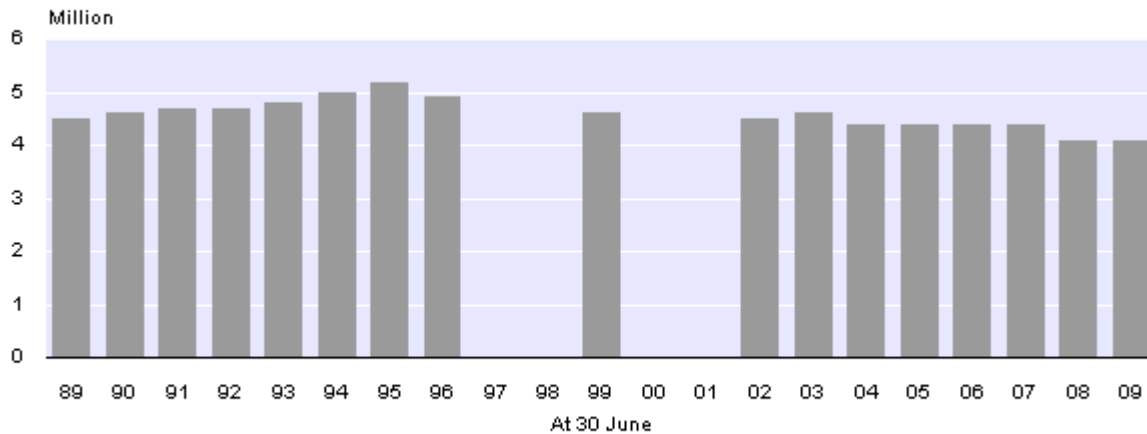
Beef

Beef cattle numbered 4.1 million at 30 June 2009. This number is similar to 2008 and 430,000 fewer than in 1989.

The number of the beef cows and heifers in calf remained stable at 1.1 million at 30 June 2009.

An estimated 910,000 calves were born to beef cows and heifers during the year ended June 2009, 7 percent fewer than in 2008.

Total Beef Cattle 1989–2009



Note: No Agricultural Production Survey was conducted for 1997, 1998, or 2001. In 2000, the survey related only to horticulture.

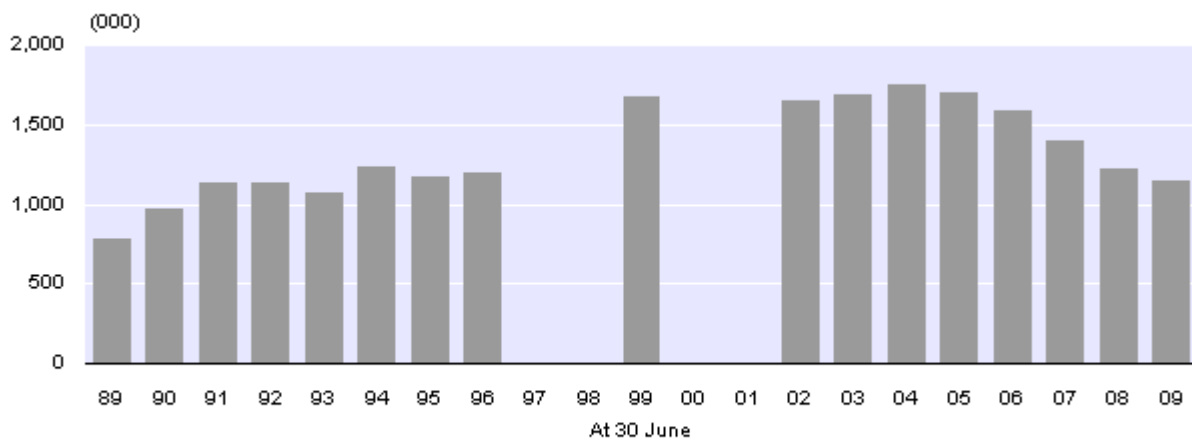
Deer

Total deer numbers at 30 June 2009 were estimated at 1.2 million, down 6 percent from 2008. Although deer numbers have fallen in recent years, they are still almost 50 percent above the 1989 figure of 780,000.

In 2009, there were 569,000 female deer mated, down 4 percent from an estimated 595,000 in 2008.

During the year ended June 2009, there were 436,000 fawns born and alive at four months, which is 12 percent lower than the previous year. This drop was in line with the fall in the number of female deer mated between 2007 and 2008, when numbers fell 13 percent.

Total Deer 1989–2009



Note: No Agricultural Production Survey was conducted for 1997, 1998, or 2001. In 2000, the survey related only to horticulture. Statistics New Zealand estimates an undercount of about 70,000 deer at 30 June 2002, and 50,000 at 30 June 2003.

Forestry

An estimated 40,000 hectares of exotic forest were harvested during the year ended 31 March 2009, a 6 percent decrease from 42,700 hectares in 2008.

New area planted during the year ended 31 March 2009 totalled 2,300 hectares, similar to the 2,700 hectares planted in the previous year. In the year ended 31 December 2001, there were 33,700 hectares of new plantings.

In 2009, there were 31,100 hectares of exotic forest replanted, down 6 percent from 33,100 hectares in the previous year. In 2001 there were 42,500 hectares replanted.

Grain crops

Wheat

Substantial increases in both the area and tonnage of wheat harvested were recorded in 2009. The area harvested was 53,900 hectares, up 27 percent on the 42,300 hectares harvested in 2008. The tonnage was 408,400, up from 343,400 tonnes in 2008. The figures include both bread wheat and wheat harvested for other purposes.

Barley

The hectares of barley harvested increased 15 percent, from 67,400 hectares in 2008 to 77,800 in 2009. The tonnage increased by 41,100 tonnes to 449,800 tonnes in 2009.

Maize grain

In 2009, there were 23,100 hectares of maize grain harvested, an increase of 26 percent from 2008. The tonnage increased to 257,000 tonnes in 2009, up 51,400 tonnes from the previous year.

Horticulture

Before 2009, horticultural production information was last collected in the 2007 Agricultural Production Census.

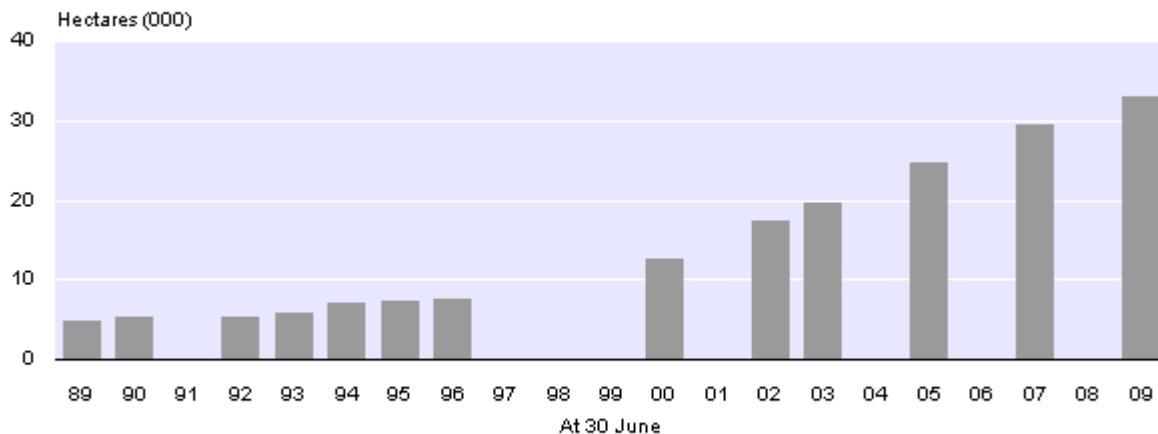
Fruit

Wine grapes

The area planted in wine grapes has continued to increase. A total of 32,960 hectares were planted in 2009 – 3,340 hectares more than the 2007 area of 29,620 hectares.

The 2009 area was more than six times the area planted twenty years ago (4,830 hectares). The expansion of wine grape plantings reflects success in the export market. In the year ended 30 June 2009, there were 112 million litres of wine exported, excluding fortified wines. Whereas, in 1989, only 3 million litres were exported.

Net Area Planted in Wine Grapes 1989–2009



Note: No Agricultural Production Survey was conducted for 1997, 1998, or 2001. In 1991, 1999, 2004, 2006, and 2008 the survey related only to livestock and arable farming. Outdoor table grapes were included prior to 2000.

Vegetables

Potatoes

- 11,490 hectares of potatoes were harvested during the year ended 30 June 2009, up 14 percent from 10,050 hectares in 2007.

Onions

- 4,600 hectares of onions were harvested during the year ended 30 June 2009 – similar to the area harvested in 2007.

Buttercup squash

- 6,960 hectares of buttercup squash were harvested during the year ended 30 June 2009, 810 hectares less than the 2007 harvest of 7,770 hectares.

Sweet corn

- 5,040 hectares of sweet corn were harvested in 2009, down 19 percent from 6,210 hectares in 2007.

The 2009 sweet corn harvest was affected by factors including competition (such as alternative land use), unfavourable weather conditions in Hawke's Bay, and the closure of a processing plant in South Canterbury.

More 2009 provisional statistics

Additional provisional statistics are available via [InfoShare](#) on the Statistics New Zealand website. Statistics are available, at the national level only, for pig numbers and more detailed age-sex categories for sheep, dairy and beef cattle, and deer.

Next release ...

Agricultural Production Statistics (Final): June 2009 will be released on 13 May 2010.

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Technical notes

Background

This release contains provisional results from the 2009 Agricultural Production Survey. This survey is part of an ongoing programme of agricultural production statistics conducted in partnership with the Ministry of Agriculture and Forestry. The current programme began with an agricultural production census in 2002 and was followed by yearly sample surveys from 2003 to 2006. An agricultural production census was held in 2007. Sample surveys were held in 2008 and 2009.

Target population

The target population for the 2009 Agricultural Production Survey was all businesses engaged in 'agricultural production activity' (including livestock, cropping, horticulture and forestry) or owned land that was intended for agricultural activity. The target population included businesses that were engaged in agriculture or forestry production as a secondary activity.

The target population was defined in terms of the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06). It specifically included businesses classified as:

- A01 Agriculture
- A0301 Forestry (excluding native forestry)

and parts of:

- L671200 Non-residential property operators
- M691000 Scientific research services (agriculture-related research that involves land holding (excluding universities))
- P802300 Combined primary and secondary education (agricultural high school operation)
- P802400 Special school education (special needs education involving agricultural production activity)
- P810200 Higher education (agriculture-related research undertaken by universities that involves land holding)
- R912100 Horse and dog racing administration and track operation
- R912900 Other horse and dog racing activities (racehorse training and racing stables operations)
- R892200 Nature reserves and conservation parks operation.

The target population specifically excluded:

- A019300 Beekeeping
- part of A019900 Other livestock farming nec (worm farming, pet breeding, dog breeding, cat breeding, bird breeding (except poultry, game birds, ostriches, and emus))
- A017100 Poultry meat (except growers who also produce eggs for human consumption).

Population frame

The 2009 Agricultural Production Survey includes all units identified on Statistics New Zealand's Business Frame as having agricultural activity. The Business Frame is a list of businesses in

New Zealand, based on their registration for goods and services tax (GST) with Inland Revenue. In the case of agriculture, the Business Frame includes:

- those units registered for GST (and filing a non-zero GST return) that have indicated involvement in agricultural activity (as defined above)
- those businesses with more than \$200,000 of GST sales or purchases, or that are an employer, whose main activity is not agriculture but that have indicated some secondary agricultural activity.

The compulsory registration level for GST is \$60,000, so there is a partial and unquantifiable coverage of units below this level.

Responses from farmers and foresters in the 2009 Agricultural Production Survey have resulted in an estimated eligible population of 60,000 enterprises.

Time series consistency

Population changes

Users should note that while there is consistency in the frame from which the population has been drawn for agricultural production data collections from 2003 to 2009, there are differences for data collections before 2003.

From 1981 to 1991, the population was sourced from an agricultural directory. Statistics NZ maintained this directory by tracing transfers of farming, horticulture, and forestry land. In 1992, this agriculture directory was merged with Statistics NZ's Business Frame. For the 1992 and 1993 surveys, population units were drawn from the Business Frame by industrial classification. In the 1994 Agricultural Production Census, for the first time the population was extracted using both the industrial classification and GST registration information.

Between 1994 and 1996, the population was all businesses, sourced from the Business Frame, that were registered for GST and classified to agriculture. The 1999 Agricultural Production Survey population was sourced solely from AgriBase (a geospatial database owned and managed by AgriQuality New Zealand Ltd). The population for the 2000 Horticulture Production Survey was sourced from the Business Frame, supplemented by AgriBase and growers' lists. For the 2002 Census, the population was sourced from the Business Frame and the Inland Revenue Client Register. These sources were checked against industry lists and AgriBase to ensure all large units were included in the population. The Business Frame was used for the 2003, 2004, 2005, and 2006 surveys, the 2007 Census and the 2008 and 2009 surveys.

Survey content changes

Users should note that there have been changes to the core information gathered in agricultural production collections.

Since 1994, agricultural production collections have gathered information on livestock and arable farming, horticulture, and forestry with the following exceptions:

- In 1999, the survey collected information on livestock and arable farming only.
- In 2000, the survey collected horticulture production information only.
- In 2004, 2006, and 2008 the surveys collected information on livestock and arable farming, and forestry (horticulture production information was not collected).

Changes to horticultural crops included in the 2009 provisional release

Changes have been made to the horticultural crops included in the 2009 provisional release compared with the 2007 Agricultural Census, which was the last time statistics on horticultural crops were collected.

Results for kiwifruit and peaches are not included in the 2009 provisional release. These results will be available in the final data release after further data processing and analysis has been carried out. Final data will be released on 13 May 2010.

This release includes provisional figures for blackcurrants, cherries, fresh and processed peas, and sweet corn. These figures have been included to assist users of horticulture data.

2009 questionnaire changes

Supplementary feed crops

This section was expanded to collect information on forage, fodder, and green feed crops.

Grain and seed crops

This question was expanded to allow respondents to specify the amount and type of other grain and seed crops harvested. These descriptions were examined and reclassified, if appropriate, to the specified grain and seed crops.

Horticulture

Questions on the area of fruit trees and vines planted, and the area of vegetables and other horticulture crops harvested were included.

Cultivation and pasture renewal

The questions in this section were expanded to collect information on pasture renewal and method of cultivation.

Past questionnaire changes relevant for 2009

Forestry

The reference date for forestry production estimates changed to 31 March in the 2005 Agricultural Production Survey. This change was made to allow the forestry section of the Agricultural Production Survey to align more closely with the National Exotic Forest Description survey (NEFD) run by the Ministry of Agriculture and Forestry.

For the 2002 Census, and the 2003 and 2004 surveys, the year ended date was 31 December. For agricultural production collections before the 2002 Agricultural Production Census, the year ended date was 30 June.

Fawns

Since the 2005 survey, the data relates to fawns born on the farm that were alive at four months. This change takes into account industry recommendations. In 1994, 1995, 1996, 1999, 2003,

and 2004, data related to fawns weaned on the farm. In 2002, data related to fawns born on the farm.

Deer

Users should note that deer figures since the 2004 survey are not directly comparable with 2002 and 2003 figures. Improvements made to the questions about deer in the 2004, 2005, and 2006 surveys have resulted in improved deer number estimates. While it is not possible to quantify the exact extent of the previous undercoverage, Statistics NZ estimates an undercount of about 70,000 deer at 30 June 2002 and 50,000 at 30 June 2003.

Sample design

For the 2009 Agricultural Production Survey, a stratified sample design was used to select a sample from the population. In selecting this sample, the population was stratified by regional council area, ANZSIC group, and size group. The size groups were determined as follows:

- For those businesses that had previously responded to one or more of the agricultural production censuses or surveys since 2002, the most recent production data was used to form size groups. The variables used to form size groups covered a range of livestock and cropping variables. Typically, three size groups were formed: small, medium, and large.
- For new businesses or those businesses that did not respond to the 2002 to 2008 agricultural collections, a random sample was taken.

The 2009 Agricultural Production Survey has a sample size of 30,000.

Reliability of sample survey estimates

This release contains statistics from the 1994–1996, 1999, and 2002–2009 agricultural production collections, as well as the 2000 horticultural production data collection. All the results from these collections are subject to non-sampling error.

Non-sampling error arises from biases in the patterns of response and non-response, inaccuracies in reporting by respondents, and errors in the recording and classification of data. Statistics NZ adopts procedures to detect and minimise these types of errors, but they may still occur and are not easy to quantify.

As the 1995, 1996, 1999, 2003–2006, and 2008 and 2009 are sample surveys, not censuses, the results from these collections are also subject to sampling error. Sampling error arises from selecting a random sample of businesses and weighting the results, rather than holding a complete enumeration. The 2009 sample design has been optimised to produce a specified sampling error for certain combinations of key variables and regions, but not all. Also, the 2009 design is optimised on the basis of the distribution of past farmer responses, mainly those to the 2008 survey. Given the dynamic nature of the agricultural sector, the sample errors for 2009 may sometimes be smaller or larger than planned, particularly for those sectors or regions rapidly changing.

Imputation

Values have been imputed for farmers and foresters who did not return a completed questionnaire. Imputation involves replacing missing items with values based on other information available.

The method of imputation used is random 'hot deck' imputation. A proportion of non-respondents were estimated as ineligible. The remaining non-respondents were grouped into imputation cells based on regional council area, ANZSIC06 (Australian and New Zealand Standard Industrial Classification 2006) group, and prior years' production data. Each non-respondent was then randomly assigned to a respondent in the same imputation cell, and the farm production data of the respondent was copied across to the non-respondent. In order to improve the imputation process, respondents with uncharacteristically high levels of agricultural activity were removed from their respective imputation cells, as it was considered unlikely that any of the non-respondents would have similar characteristics to them.

Imputation levels

Imputation levels and sampling errors for the 2009 Agricultural Production Survey		
	Sampling errors at 95% confidence interval (%)	% of total estimate imputed
Ewe hoggets put to ram	12	18
Breeding ewes 2-tooth and over put to ram	4	19
Total sheep	4	19
Lambs born to ewe hoggets	17	22
Lambs born to ewes	4	20
Total lambs	4	20
Dairy cows and heifers, in milk or calf	5	25
Total dairy cattle	5	25
Calves born alive to dairy heifers/cows	5	31
Beef cows and heifers in calf (aged 1–2 years)	8	16
Beef cows and heifers in calf (aged 2 years and over)	5	18
Total beef cattle	3	19
Calves born alive to beef heifers/cows	5	26
Female deer mated	6	18
Total deer	5	17
Fawns born on the farm	6	19
Area of new forestry plantings (hectares)	22	6
Area of forestry replantings (hectares)	6	2
Exotic timber harvested (hectares)	1	2

Exotic timber harvested (cubic metres)	1	2
Wheat tonnage harvested	13	20
Wheat area harvested (hectares)	13	20
Barley tonnage harvested	9	24
Barley area harvested (hectares)	9	24
Oat grain tonnage harvested	43	14
Oat grain area harvested (hectares)	37	14
Maize grain tonnage harvested	15	20
Maize grain area harvested (hectares)	12	19
Other cereal grains tonnage harvested	50	9
Other cereal grains area harvested (hectares)	44	10
Net area planted in apples (hectares)	2	12
Net area planted in cherries (hectares)	< 1	8
Net area planted in blackcurrants (hectares)	< 1	13
Net area planted in avocados (hectares)	8	17
Net area planted in wine grapes (hectares)	2	14
Harvested area of onions (hectares)	46	8
Harvested area of peas (hectares)	20	20
Harvested area of sweet corn (hectares)	8	9
Harvested area of potatoes (hectares)	18	13
Harvested area of squash (hectares)	12	8

Response rates

The estimated proportion of eligible businesses that responded to the 2009 Agricultural Production Survey was 82 percent. These businesses represent 83 percent of the total estimated value of agricultural operations.

Revisions

In some cases, data collected before the 2009 Agricultural Production Survey may be revised. This revision usually results from the correction of information provided by survey respondents. Revised figures are indicated in the tables by an 'R'. Revisions to previous data have not been included in this provisional release. It will be included in the final data release in May 2010.

Confidentiality

Data collected and information contained in this release must conform to the provisions of the Statistics Act 1975. This requires that published information maintains the confidentiality of individual respondents. Figures affected by these provisions have been suppressed and are denoted by 'C'.

Quality suppressions

Data with high sample errors or imputation levels have been suppressed and are indicated by an 'S'.

More information

For more information, follow the link from the technical notes of this release on the Statistics NZ website.

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Timing

Timed statistical releases are delivered using postal and electronic services provided by third parties. Delivery of these releases may be delayed by circumstances outside the control of Statistics NZ. Statistics NZ accepts no responsibility for any such delays.

Tables

The following tables are printed with this Hot Off the Press and can also be downloaded from the Statistics New Zealand website in Excel format. If you do not have access to Excel, you may use the [Excel file viewer](#) to view, print and export the contents of the file.

List of tables

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3. Dairy cattle numbers, 1994–2009
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