

# Agricultural Production Statistics: June 2012 (provisional)

Embargoed until 10:45am – 17 December 2012

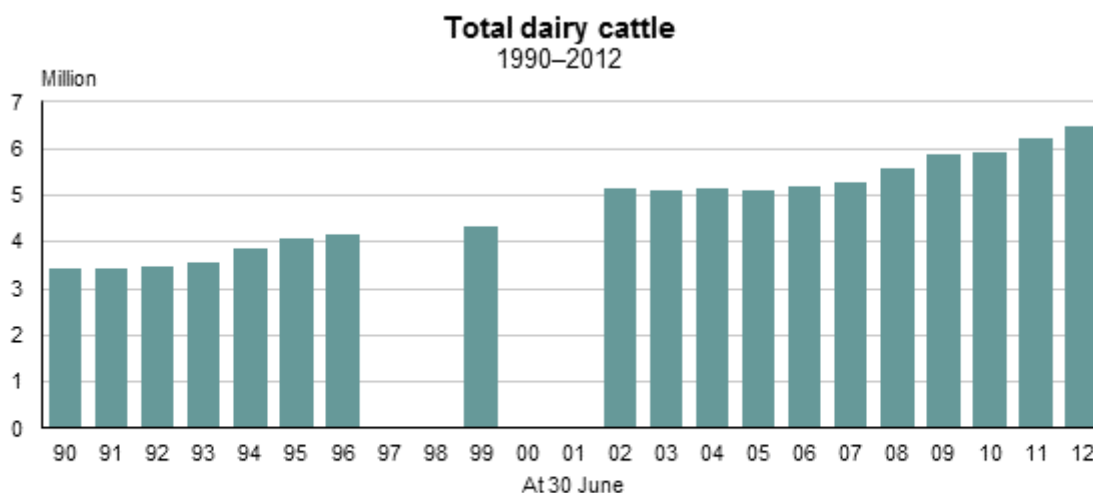
## Key facts

At 30 June 2012:

- The dairy cattle number was 6.5 million (23 percent higher than 2007).
- The sheep number was 31.2 million (down 7.3 million from 2007).
- The kiwifruit canopy area was 12,820 hectares (similar to the area in 2007).

During the year ended 31 March 2012:

- The area of new forestry planting was 11,600 hectares, up by 61 percent from 2011.



Note: No agriculture production survey was conducted in 1997, 1998, and 2001. In 2000, the survey related only to horticulture.

Source: Statistics New Zealand

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## Commentary

- Dairy cattle number at 6.5 million due to strong international demand for dairy products
- Sheep number falls 19 percent in past five years
- Beef cattle number continues to decrease
- Deer number continues trend of successive declines
- Pig number falls 14 percent since 2007 as farmers face challenges
- Planting schemes encourage increase in forestry planting
- 2012 a good season for arable crops
- Horticulture results vary for 2012

This release contains provisional results for key livestock, forestry, arable, and horticultural crops from the 2012 Agricultural Production Census. The provisional results can change after further processing and analysis of data. Final results for all data will be released on 13 May 2013.

Comparisons made in the commentary refer to the 2007 Agriculture Production Census, the last census conducted.

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

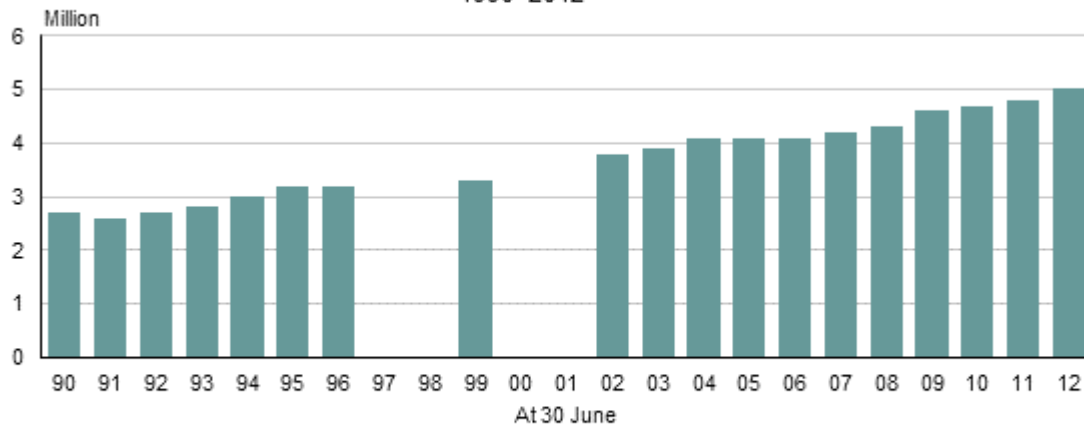
### **Dairy cattle number at 6.5 million due to strong international demand for dairy products**

There were 6.5 million dairy cattle in New Zealand at 30 June 2012, continuing the industry's growth in recent years. This was up 5 percent (288,000) from 2011 and up 23 percent (1.2 million) from the total of 5.3 million in 2007.

Strong international demand for dairy products was the main driving force behind the dairy cattle increase. The milk solid price increased from \$4.05 per kilogram in January 2007 to a record high of \$7.95 in April 2011. Since then, the milk solid price has dropped, although it was still relatively high (at \$6.00) at the end of the 2011/ 12 season.

The value of dairy exports (milk powder, butter, cheese, and casein) has also grown significantly over the last five years, with exports increasing 72 percent (to \$12.5 billion) since 2007.

### Total dairy cows and heifers in milk or in calf 1990–2012



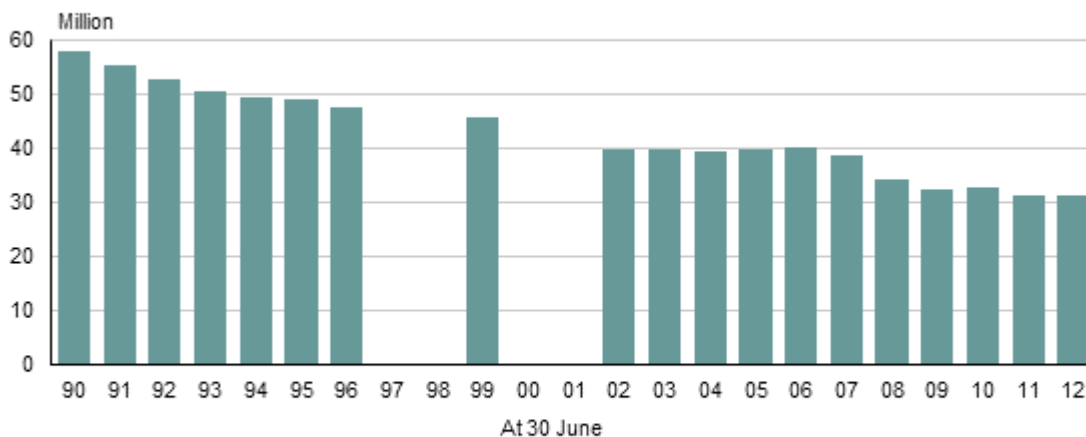
Note: No agriculture production survey was conducted in 1997, 1998, and 2001. In 2000, the survey related only to horticulture.

Source: Statistics New Zealand

### Sheep number falls 19 percent in past five years

With a provisional estimate of 31.2 million sheep in 2012, there was little change in the size of the national flock from 2011. However, when compared with the previous census in 2007, the number has fallen by 7.3 million (19 percent). Disappointing farm-gate prices for sheep meat between 2007 and 2010, and competition for farm land from the expanding dairy industry, had significant effects on sheep number.

### Total sheep 1990–2012



Note: No agriculture production survey was conducted in 1997, 1998, and 2001. In 2000, the survey related only to horticulture.

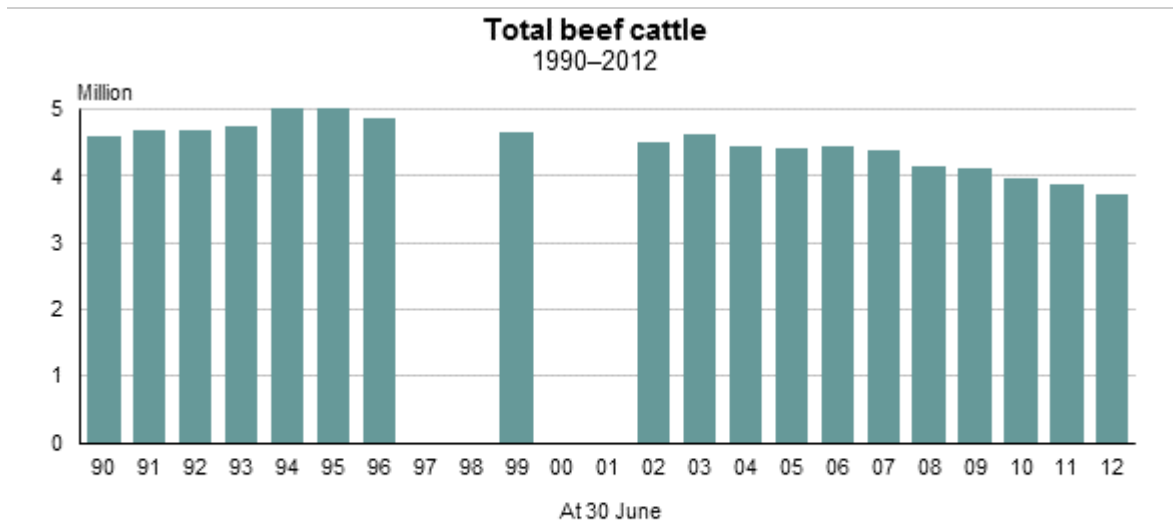
Source: Statistics New Zealand

Lambing during the year ended June 2012 was considerably better than in 2011. The lambing percentage for 2012 was 127 percent, compared with 115 percent in 2011 (calculated as total lambs tailed divided by ewes mated in the previous year). The number of lambs tailed increased by 949,000 between 2011 and 2012, with a total of 25.9 million lambs tailed in 2012.

Sheepmeat prices improved in 2011 and 2012 and the outlook is better than in recent years. This is reflected in a slight increase in the breeding stock number (ewes and ewe hoggets put to ram), up 1 percent (223,000) compared with 2011.

### Beef cattle number continues to decrease

At 30 June 2012 there was a total of 3.7 million beef cattle, down 15 percent (657,000) compared with 2007. Between 2011 and 2012 the number fell 3 percent, with 110,000 fewer beef cattle in 2012. Pressure from alternative land uses such as dairy grazing has contributed to the continuing decline in the number of beef cattle.



Note: No agriculture production survey was conducted in 1997, 1998, and 2001. In 2000, the survey related only to horticulture.

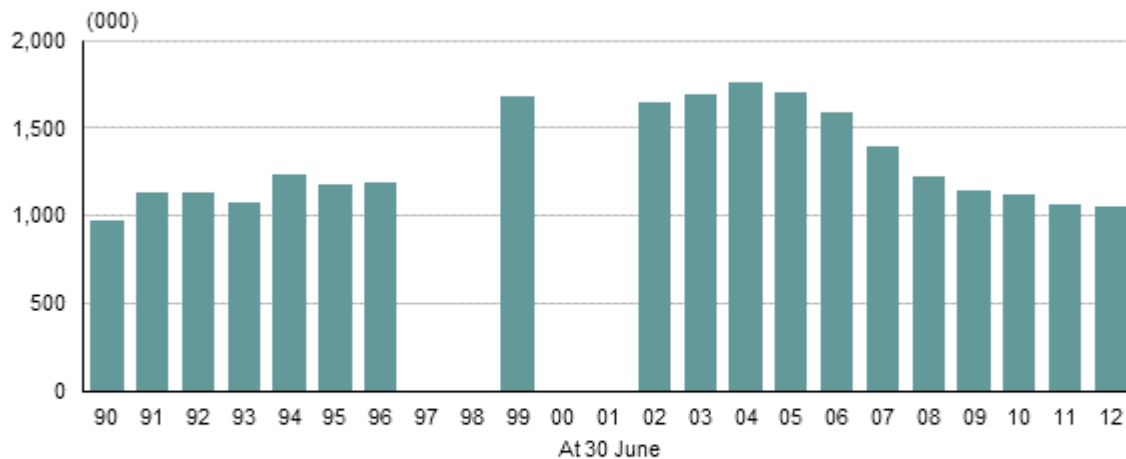
Source: Statistics New Zealand

### Deer number continues trend of successive declines

The number of deer has been declining since 2004. There were 1 million deer in 2012, a 25 percent decrease (347,000) since 2007 and down 4 percent (40,000) compared with 2011.

The deer breeding herd has also been reducing, with 3 percent fewer female deer mated in 2012 than in 2011. In 2012, 513,000 female deer were mated, down from 531,000 in 2011.

### Total deer 1990–2012



Note: No agriculture production survey was conducted in 1997, 1998, and 2001. In 2000, the survey related only to horticulture. Statistics New Zealand estimates undercounts of about 70,000 deer at 30 June 2002, and 50,000 at 30 June 2003.

Source: Statistics New Zealand

### Pig number falls 14 percent since 2007 as farmers face challenges

There were 316,000 pigs in New Zealand at 30 June 2012, a decrease of 14 percent (51,000 pigs) from 2007. The number of pigs also decreased from 2011 – by 3 percent (11,000).

Production costs for pig farmers have increased by almost 33 percent since 2007, while prices for pork increased less than 6 percent in the same period. Other challenges faced by the pig industry included competition from imported pork, animal disease outbreaks, and increasing costs associated with animal welfare. Between 2007 and 2012, imported pork went up by 18 percent, and it accounted for almost 45 percent of domestic consumption in 2012.

### Planting schemes encourage increase in forestry planting

In the year to 31 March 2012, the new area of exotic forest planted was estimated at 11,600 hectares. This was 4,400 hectares more than in 2011 and 9,100 more than in 2007. The increase since 2011 was largely due to new planting schemes such as the Afforestation Grant Scheme and the East Coast Forestry Project being continued. Government plantation schemes, and planting for carbon credits, encouraged foresters to plant more new area compared with five years ago.

During 2012, 41,600 hectares of exotic forest were replanted, 19 percent more than the 35,100 hectares replanted in 2011. (This is the area replanted following clearfelling or salvage logging.)

The total area of exotic forest harvested during 2012 increased to 49,600 hectares, up 5 percent on the 2011 area harvested. Strong international demand for New Zealand forestry products continued to drive the increase in harvesting. The total volume of exotic forest harvested during the year was 25.7 million cubic metres.

At 30 June 2011, 1.6 million hectares of planted exotic trees and 73,100 hectares of harvested exotic forest area were awaiting restocking.

Further information on forestry trade and production is available from the [Ministry for Primary Industries](#).

## 2012 a good season for arable crops

The year ended June 2012 was an excellent growing season for wheat and barley. The yield per hectare for wheat reached 8.8 tonnes per hectare, an increase of 21 percent from 2011. Barley reached 6.6 tonnes per hectare in 2012, up 16 percent when compared with 2011. In 2012, the yield per hectare for maize grain was 10.7 tonnes per hectare, down 6 percent when compared with 2011.

In the last five years, the area harvested for the main arable crops has expanded. Since 2007 the area of wheat harvested has increased by 35 percent, to 54,900 hectares in 2012. The area of barley harvested increased by 29 percent, to 66,300 hectares in 2012, and for maize grain the area harvested increased by 19 percent, to 20,200 hectares.

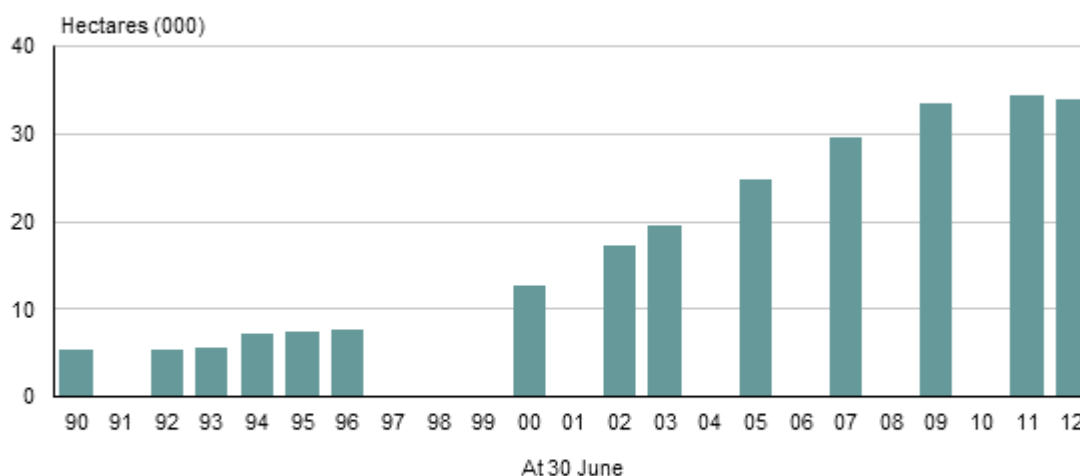
## Horticulture results vary for 2012

### Wine grapes stabilise due to low prices

In 2012, the area planted in wine grapes was 34,020 hectares, this was similar to 2011's area. Low prices for wine grapes since 2009 has limited the area's expansion.

While there was little movement between 2011 and 2012, the provisional results indicated some regional variation. This may be due to the continued dominance of the sauvignon blanc grape variety. More information will be available in May 2013.

**Area planted in wine grapes**  
1990–2012



Note: No agriculture production survey was conducted in 1997, 1998, and 2001. In 1991, 1999, 2004, 2006, 2008 and 2010, the survey related only to livestock and arable farming. In 1996 and earlier years, the question asked for area in outdoor grape.

Source: Statistics New Zealand

## **Kiwifruit maintains area grown despite Psa**

The new Psa-resilient gold varieties of kiwifruit have minimised the impact from Psa disease in recent years. There were 12,820 hectares of kiwifruit canopy area in 2012, slightly less than the 2007 figure (13,080 hectares) and also lower than the 2011 figure (13,070 hectares). The continuing conversion to new gold kiwifruit varieties was encouraged by the high gold kiwifruit prices.

## **Area of avocados and peas both increase**

The quantity of avocados exported increased to 21.2 million kilograms in 2012, from a low in 2007 of 5.4 million kilograms. Australia took over 80 percent of the exported quantity for the year ended June 2012. The planted area of avocados has shown steady growth since 2007, increasing in 2012 to 4,190 hectares, 5 percent more than in 2007.

In 2012, 6,430 hectares of peas were harvested, a slight increase of 3 percent (200 hectares) when compared with 2011. Relocation of vegetable processors from Australia to New Zealand has increased the contracts offered for growing peas in the last two years. The area of peas harvested has fluctuated during the last five years. When compared with the area grown in 2007, it has decreased 5 percent (360 hectares).

For more detailed agricultural production data see the Excel tables in the 'Downloads' box.

## Definitions

### About the Agricultural Production Census

The Agricultural Production Census is part of an ongoing programme of agricultural production statistics conducted in partnership with the Ministry for Primary Industries. Previous censuses were held in 2002 and 2007, with sample surveys in 2003–06 and 2008–11.

The 2012 Census covers land use, animal farming (livestock), horticultural and arable crop growing, forestry, and farming practices in New Zealand (including fertiliser and cultivation). This release contains provisional results from the 2012 Agricultural Production Census.

### More definitions

**Arable:** capable of being ploughed, fit for tillage (not pasture or wood-land).

**Bull:** entire (ie not castrated) male cattle.

**Calf:** young cattle of either sex between birth and weaning, with eight temporary teeth. Also sometimes refers to animals up to one-year-old.

**Calving percentage:** calculated either by calves weaned to number of cows mated, or calves sold to cows mated in the previous year.

**Cow:** mature female cattle beast of any age, but usually over 30 months.

**Dairy milking herd:** milk-producing cows and heifers, which includes all cows and heifers either in milk or in calf.

**Dairy replacement herd:** dairy cows and heifers not currently producing milk and all calves and heifers reared for future dairy breeding and milking.

**Dry cow/ewe:** a female animal not carrying offspring.

**Ewe:** a female sheep.

**Flock:** group of sheep, angora or feral goats, or poultry.

**Heifer:** female cattle having no more than six permanent incisors.

**Herd:** group of cattle, horses, or milking goats (or pigs and deer).

**Hogget:** a young male or female sheep having no more than two permanent incisors in wear.

**Lamb:** sheep under 12 months of age, or without any permanent teeth in wear.

**Lambing percentage:** number of lambs marked or tailed per ewe mated in the previous year.

**Ram:** adult uncastrated male sheep having more than two permanent incisors in wear.



**Schedule:** basic minimum price paid to a farmer by a meat processing company. Based on categories of stock. Usually announced weekly. Variable premiums can apply for particular groups at certain times.

**Steer:** male cattle castrated when young. Does not develop secondary sexual characteristics (eg large shoulders) or masculine temperament.

**Two-tooth:** sheep with two teeth (one-year-old).

**Wether:** a castrated male sheep.

## **Related links**

### **Upcoming releases**

*Agricultural Production Statistics: June 2012 (final)* will be released on 13 May 2013.

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### **Past releases**

See [Agricultural Production Statistics](#) for links to past releases.

### **Related information**

[See agriculture, horticulture, and forestry](#) for more information.

## Data quality

### Period-specific information

This section contains information about data that has changed since the last release.

- [Survey information](#)
- [2012 questionnaire changes](#)
- [2012 imputation levels](#)
- [Response rates](#)

### General information

This section has information that does not change between releases.

- [About the estimates](#)
- [Population frame](#)
- [Survey population](#)
- [Population changes](#)
- [Survey content changes](#)
- [Past questionnaire changes](#)
- [Reliability of sample survey estimates](#)
- [Imputation](#)
- [Revisions](#)
- [Confidentiality](#)
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- [More information](#)

## Period-specific information

### Survey information

This release contains provisional results for key livestock, forestry, horticultural, and arable crops from the 2012 Agricultural Production Census. The provisional results can change after further processing and analysis of data. Final results for all data items will be released on 13 May 2013. These final figures will be available at regional and territorial authority level and will also include tables for collectively owned Maori farms whose owners are members of the Federation of Maori Authorities.

The 2012 Census was part of the current programme of agricultural production statistics that started in 2002. Previous censuses were held in 2002 and 2007, with annual sample surveys in 2003–06 and 2008–11.

Responses from farmers and foresters in the 2012 Agricultural Production Census resulted in an estimated eligible population of 58,200 enterprises.

### 2012 questionnaire changes (from 2011)

**Farm practices** – we included questions on the irrigable area of the farm, and formal farm-nutrient planning documents. This information will be available in May 2013.

## 2012 imputation levels

Imputation levels for the 2012 Agricultural Production Census	
	% of total estimate imputed
Ewe hoggets put to ram	14
Breeding ewes (2-tooth and older) put to ram	14
<b>Total sheep</b>	14
Lambs born to ewe hoggets	14
Lambs born to ewes	15
<b>Total lambs</b>	15
Dairy cows and heifers, in milk or calf	20
<b>Total dairy cattle</b>	20
Calves born alive to dairy heifers/cows	30
Beef cows and heifers in calf (age 1–2 years)	15
Beef cows and heifers in calf (aged 2 years and over)	14
<b>Total beef cattle</b>	14
Calves born alive to beef heifers/cows	21
Female deer mated	11
<b>Total deer</b>	11
Fawns born on the farm	14
Area of new forestry plantings (hectares)	10
Area of forestry replantings (hectares)	3
Exotic timber harvested (hectares)	4
Exotic timber harvested (cubic metres)	4
Wheat tonnage harvested	13
Wheat area harvested (hectares)	13
Barley tonnage harvested	15
Barley area harvested (hectares)	15
Oat grain tonnage harvested	11
Oat grain area harvested (hectares)	12
Maize grain tonnage harvested	15
Maize grain area harvested (hectares)	13
Other cereal grains tonnage harvested	8
Other cereal grains area harvested (hectares)	8
Wine grapes	11
Kiwifruit	10
Apples	7
Avocados	13
Blackcurrants	18
Cherries	6
Fresh/processed peas	8
Onions	8
Sweetcorn	4
Squash	1
Potatoes	11

## **Response rates**

The estimated proportion of eligible businesses that responded to the 2012 Agricultural Production Census for this provisional release was 84 percent. These businesses represent 86 percent of the total estimated value of agricultural operations.

## **General information**

### **About the estimates**

Figures in this release are rounded. All percentages in this release are calculated using unrounded figures. The figures from the agricultural production surveys may differ from those produced from other sources, such as the National Exotic Forest Description Survey produced by the Ministry for Primary Industries, the Stock Number Survey from Beef and Lamb New Zealand Limited, and Dairy Statistics from Livestock Improvement Corporation Limited. These surveys use different survey frames and designs.

### **Population frame**

The agricultural production surveys include 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.

It should be noted that the compulsory registration level for GST is \$60,000, so there is a partial and unquantifiable coverage of units below this level.

### **Survey population**

The survey population for the agricultural production surveys is all businesses engaged in 'agricultural production activity' (including livestock, cropping, horticulture, and forestry), or which own land that is intended for agricultural activity. The survey population includes businesses engaged in agriculture or forestry production as a primary or secondary activity.

### **Industries in scope**

The survey population specifically includes businesses classified to the following ANZSIC06 codes:

- A01 Agriculture
- A0301 Forestry (excluding native forestry).

It also includes 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 survey population specifically excludes:

- 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 changes**

While there is consistency in the frame from which the population is drawn for agricultural production data collections from 2003 to 2012, there are differences for data collections before 2003.

From 1981 to 1991, the population was sourced from an agricultural directory. This was maintained by Statistics NZ 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 that were registered for GST and classified to agriculture, sourced from the Business Frame. 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 and 2012 Censuses, and the 2008, 2009, 2010, and 2011 surveys.

## **Survey content changes**

Over the years there have been changes to the core information gathered in agricultural production collections.

Since 1994, these 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, 2008, and 2010, the surveys collected information on livestock and arable farming, and forestry (horticulture production information was not collected).

## Past questionnaire changes

### 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 survey to align more closely with the National Exotic Forest Description survey 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. 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. The change took industry recommendations into account.

### Deer

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 and 2005 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.

## Reliability of sample survey estimates

This release contains statistics from the 1994–96, 1999, 2000, and 2002–12 agricultural production collections. All 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 recording and classifying data. Statistics NZ adopts procedures to detect and minimise these types of errors, but they may still occur and are not easy to quantify.

**Sampling error** arises from selecting a random sample of businesses and weighting the results, rather than holding a complete enumeration. As the 1995, 1996, 1999, 2003–06, and 2008–11 collections are sample surveys, not censuses, the results from these collections are also subject to sampling error.

## Imputation

Values are imputed for farmers and foresters who do 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 are estimated as ineligible for imputation. The remaining non-respondents are grouped into imputation cells based on regional council area, ANZSIC06 group,

and prior years' production data. Each non-respondent is then randomly assigned to a respondent in the same imputation cell, and the farm production data of the respondent is copied across to the non-respondent.

To improve the imputation process, respondents with uncharacteristically high levels of agricultural activity are removed from their respective imputation cells. It is unlikely that any of the non-respondents would have similar characteristics to them.

## Revisions

In some cases, data collected before the 2012 Agricultural Production Census may be revised. This revision usually results from correcting information provided by survey respondents. Revised figures are indicated in the tables by 'R'. Revisions to previous data are not included in this provisional release. Any revisions will be included in the final data release in May 2013.

## Confidentiality

Data collected and information contained in this release must conform to the provisions of the Statistics Act 1975. Published information must maintain the confidentiality of individual respondents. Figures in the tables affected by these provisions are denoted by 'C'.

## Quality suppression

Data with high sample errors or imputation levels are suppressed and are indicated by 'S' in the tables.

## More information

See [Agriculture, horticulture and forestry](#).

## Liability

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## Tables

The following tables are available in Excel format from the 'Downloads' box. If you have problems viewing the files, see [opening files and PDFs](#).

1. Sheep numbers, 1994–2012
2. Lambs marked or tailed, 1994–2012
3. Dairy cattle numbers, 1994–2012
4. Beef cattle numbers, 1994–2012
5. Deer numbers, 1994–2012
6. Pigs numbers, 1994–2012
7. Forestry, 1994–2012
8. Grain crops, 2003–12
9. Net area planted in outdoor fruit, 1994–2012
10. Harvested area of outdoor vegetables, 1994–2012

## Access more data on Infoshare

Use [Infoshare](#), a free, online database to access time-series data specific to your needs. To access the release time series on Infoshare, select the following categories from the homepage:

Subject category: **Industry sectors**

Group: **Agriculture**