

Embargoed until 10:45am – 10 February 2009

Agricultural Production Statistics: June 2008 (provisional)

Highlights

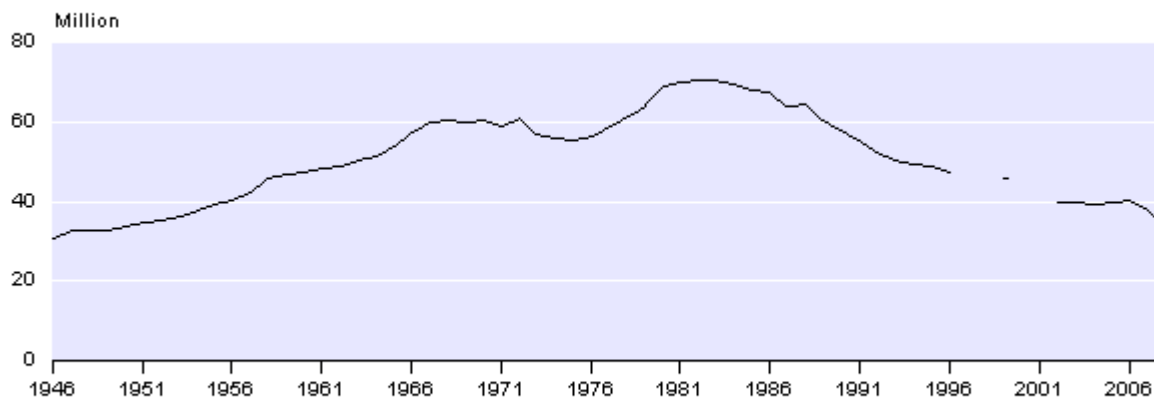
At 30 June 2008 compared with 2007:

- Sheep numbers fell to 33.9 million, down 12 percent.
- Dairy cattle numbers reached 5.6 million, up 6 percent.
- Beef cattle numbers fell to 4.1 million, down 6 percent.
- Deer numbers fell to 1.2 million, down from 1.4 million.

During the year ended 30 June 2008:

- 67,000 hectares of barley were harvested, up 30 percent from 2007.

Total Sheep
1946–2008



Note: No agriculture production survey was conducted in 1997, 1998 and 2001. In 2000, the survey related only to horticulture. Prior to 1972, the survey reference period was 31 January. From 1972, it was 30 June each year.

Cathryn Ashley-Jones
Acting Government Statistician

10 February 2009
ISSN 1178-0398

See also [Agricultural Production Statistics: June 2008 \(provisional\) – Media release](#).

Commentary

This release contains provisional results from the 2008 Agricultural Production Survey. The survey covered livestock and arable farming, and forestry, and included questions on farming practices.

The 2008 survey is part of the current programme of censuses and surveys of agricultural production. This programme began with a census in 2002 and then annual sample surveys were carried out from 2003 to 2006. A census was held in 2007.

Estimates from sample surveys are subject to sampling errors. Refer to the Technical notes of this release for further information.

These results are provisional and can change after further processing and analysis of data. Final results from the 2008 survey, including results at regional level, are due for release in May 2009.

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

Livestock

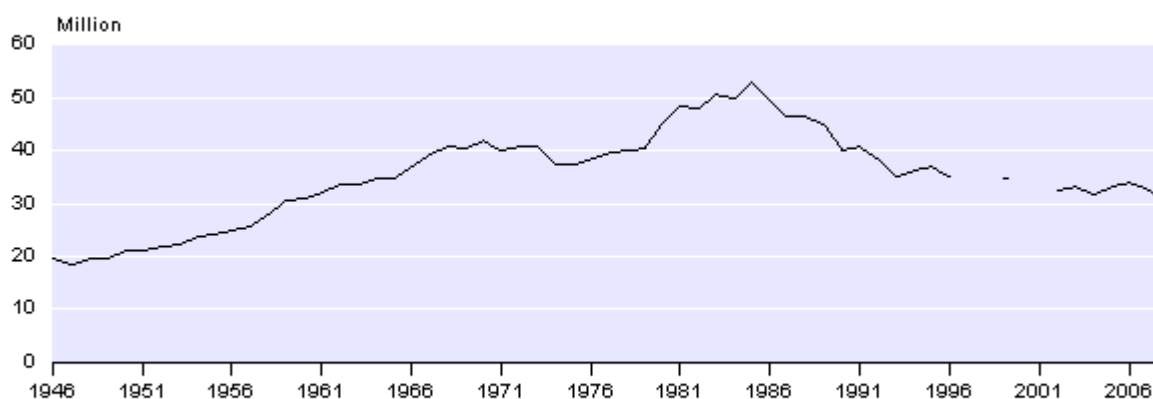
Sheep

Sheep numbers at 30 June 2008 were provisionally estimated at 33.9 million. The national sheep flock was last recorded at this level in 1950. Sheep numbers have fallen by 12 percent since 2007, when there were 38.5 million sheep.

The number of breeding ewes (two-tooth and older) put to ram was estimated at 23.4 million in 2008. This is down 10 percent on the 2007 figure of 26.1 million. There were 1.5 million ewe hoggets put to ram in 2008, down from 2.5 million in 2007.

There were 30.9 million lambs tailed in the year to 30 June 2008, down 6 percent on the previous year. Numbers in 2008 were back to a level last recorded in 1960.

Total Lambs Marked or Tailed
1946–2008



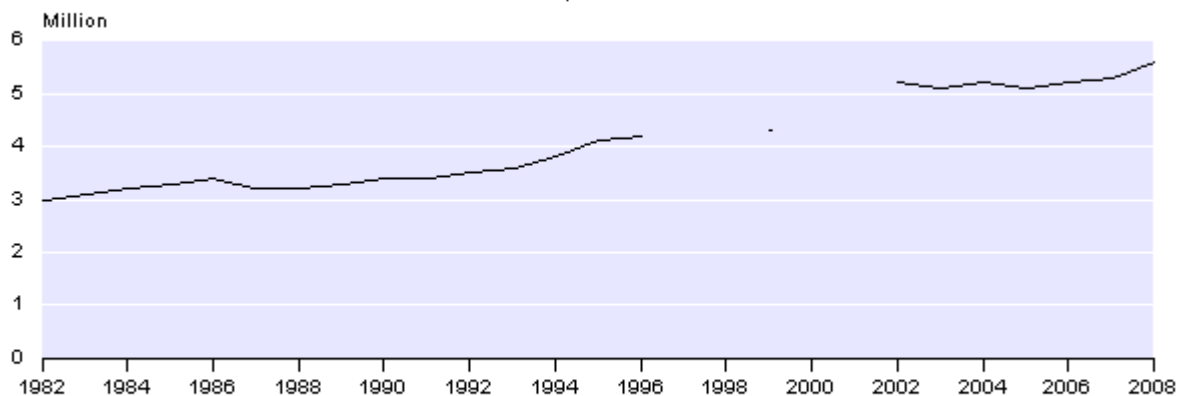
Note: No agriculture production survey was conducted in 1997, 1998 and 2001. In 2000, the survey related only to horticulture. Prior to 1972, the survey reference period was year to 31 January. From 1972, it was year to 30 June.

Dairy

The national dairy herd was provisionally estimated to have reached 5.6 million in 2008, which was 6 percent higher than in 2007.

In 2008, there were an estimated 4.3 million dairy cows and heifers in milk or calf. This number is 172,600 above the 2007 figure. The number of dairy replacement cattle (dairy cows and heifers not in milk, rising one-year-old dairy cows and heifers, and calves) was estimated at 1.2 million in 2008. The ratio between the replacement herd and the milking herd has increased since 2005. It was 26.9 percent in 2008, up from 22.5 percent in 2005.

Total Dairy Cattle
At 30 June, 1982–2008

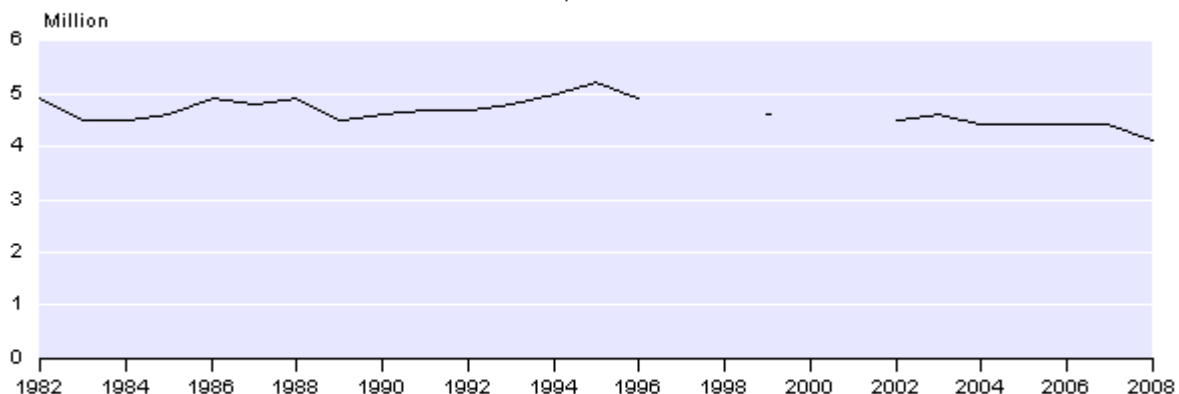


Note: No agriculture production survey was conducted in 1997, 1998 and 2001. In 2000, the survey related only to horticulture.

Beef

Provisional results show that beef cattle numbers declined to 4.1 million at 30 June 2008. This estimate is 6 percent lower than in 2007 when there were 4.4 million beef cattle.

Total Beef Cattle
At 30 June, 1982–2008

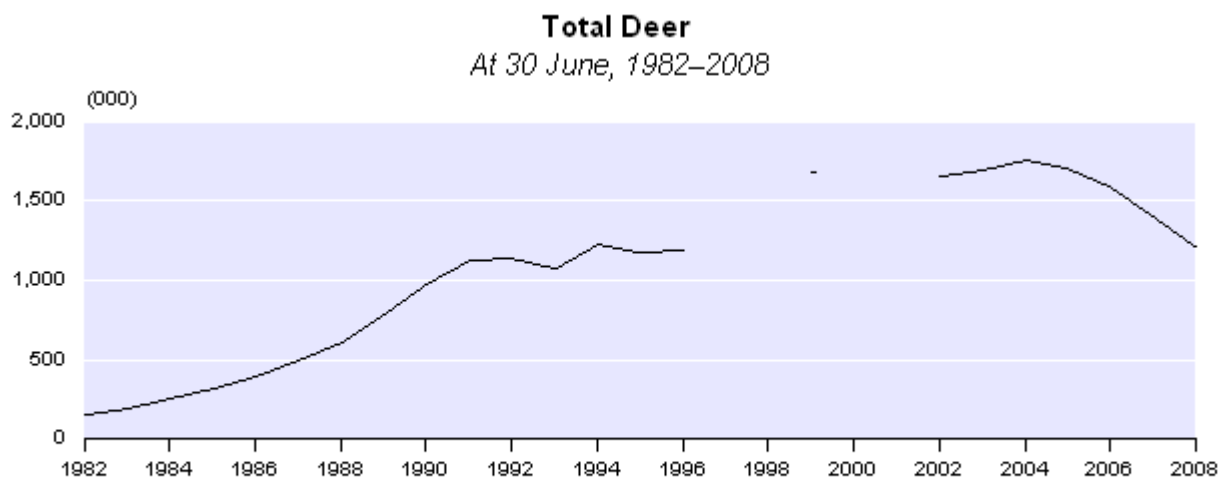


Note: No agriculture production survey was conducted in 1997, 1998 and 2001. In 2000, the survey related only to horticulture.

Numbers in the beef breeding herd continued to fall and were estimated at 1.1 million in 2008. This was 8 percent lower than the 2007 figure of 1.2 million.

Deer

Total deer numbers were estimated at 1.2 million in 2008, down from 1.4 million in 2007. Deer numbers have fallen in recent years, and in 2008 were back to the 1994 level. Breeding stock numbers continued to fall, with an estimated 596,900 female deer mated in 2008. This compares with 680,100 reported in the 2007 Agricultural Production Census.



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

Deer numbers for 2004, 2005, 2006 and 2007 are not directly comparable with 2002 and 2003 figures. Changes made to the questions about deer from 2004 onwards have resulted in improved estimates of deer numbers.

Forestry

The area of exotic forest harvested during the year to 31 March 2008 was 42,100 hectares, compared with 40,800 hectares in the previous year. The 2008 figure was 10 percent less than the 46,700 hectares recorded in the 2002 Agricultural Production Census.

In the year to 31 March 2008, the areas of new plantings (on land not previously in forest) and replantings were 2,700 hectares and 33,100 hectares, respectively.

Grain crops

Wheat

The area of wheat harvested increased to 42,500 hectares during the year to 30 June 2008, up from 40,500 hectares in 2007. There were 345,300 tonnes harvested in 2008, similar to the 344,400 tonnes harvested the previous year.

Barley

Provisional results from the 2008 survey showed that barley production increased in both the area harvested, and tonnage harvested, during the year to 30 June 2008. The area harvested increased 30 percent, to 67,000 hectares in 2008, up from 51,500 hectares in 2007. The tonnage harvested increased 22 percent to 409,200 tonnes.

Maize grain

An estimated 18,500 hectares and 210,400 tonnes of maize grain were harvested in the year to 30 June 2008. In the 2007 year, 17,000 hectares and 185,600 tonnes were harvested.

For technical information contact:

Andrew Chou

Auckland 09 920 9332

Email: info@stats.govt.nz

Next release ...

Agricultural Production Statistics: June 2008 (final) will be released on 14 May 2009.

Technical notes

Background

This release contains provisional results from the 2008 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 agricultural statistics 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.

Target population

The target population for the 2008 Agricultural Production Survey was all businesses engaged in 'agricultural production activity' (including livestock, cropping, horticulture and forestry) or that owned land 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) classification. 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 2008 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 \$40,000, so there is a partial and unquantifiable coverage of units below this level.

Responses from farmers and foresters in the 2008 Agricultural Production Survey have resulted in an estimated eligible population of 60,700 enterprises.

Time series consistency

Population changes

Users should note that there have been changes to the frame from which the population has been drawn for agricultural production surveys.

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, 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 survey.

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).

2008 questionnaire changes

Land use

The land use question was expanded to ask about the harvested exotic forest area awaiting restocking.

Grain and seed crops

This question was expanded to include a separate category for clover seed. A category for fresh and process peas was included in this question.

Fertiliser

The fertiliser question was expanded to include separate categories for 15 percent potassic superphosphate, 30 percent potassic superphosphate, and dolomite.

Controlled burning

This question was expanded to ask about the burning of crop residue from wheat, barley, oats and other standing vegetation.

Land cultivated or direct drilled

This question was expanded to ask about the land area cultivated out of pasture.

Past questionnaire changes relevant for 2008

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 prior to 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 2008 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 2007 agricultural collections, a random sample was taken.

The 2008 Agricultural Production Survey has a sample size of 30,000.

Reliability of sample survey estimates

This release contains statistics from the 1991, 1992, 1993, 1995, 1996, 1999, 2003, 2004, 2005, 2006 and 2008 Agricultural Production Surveys, which are sample surveys. Users should note that estimates from sample surveys are subject to both sampling and non-sampling errors.

Sampling error arises from selecting a sample of businesses and weighting the results, rather than taking a complete enumeration, and is not applicable when there is a census. The 1981–1990, 1994, 2002 and 2007 Agricultural Production Censuses and the 2000 Horticultural Production Survey are not subject to sampling error, although they 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.

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.

Horticultural businesses were not surveyed in the 2008 Agricultural Production Survey. Values for non-horticultural variables for these units were imputed based on responses to the 2007 Agricultural Production Census.

Imputation levels and sampling errors for the 2008 Agricultural Production Survey		
	Sampling errors at 95% confidence interval (%)	% of total estimate imputed
Breeding ewes 2-tooth and older put to ram	2	19
Ewe hoggets put to ram	6	25
Total sheep	2	20
Lambs born to ewe hoggets	6	21
Lambs born to ewes	2	21
Total lambs	2	21
Dairy cows and heifers, in milk or calf	3	24
Total dairy cattle	2	24
Calves born alive to dairy heifers/cows	3	32
Beef cows and heifers in calf (aged 2 years and older)	3	20
Beef cows and heifers in calf (aged 1–2 years)	5	21
Total beef cattle	2	20
Calves born alive to beef heifers/cows	2	26
Female deer mated	19	18
Total deer	10	17
Fawns born on the farm	19	21
Area of new forestry plantings (hectares)	12	17
Area of forestry replantings (hectares)	1	1
Exotic timber harvested (hectares)	3	3
Exotic timber harvested (cubic metres)	3	3
Wheat tonnage harvested	12	26
Wheat area harvested (hectares)	11	25
Barley tonnage harvested	7	23
Barley area harvested (hectares)	8	21
Oats tonnage harvested	21	21
Oats area harvested (hectares)	20	19
Maize grain tonnage harvested	8	34
Maize grain area harvested (hectares)	12	35
Other cereal grains tonnage harvested	31	19
Other cereal grains area harvested (hectares)	30	18

Response rates

The estimated proportion of eligible businesses that responded to the 2008 Agricultural Production Survey was 83 percent. These businesses represent 86 percent of the total estimated value of agricultural operations.

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.

More information

For more information, follow the [link](#) from the Technical notes of this release on the Statistics NZ website.

Copyright

Information obtained from Statistics NZ may be freely used, reproduced, or quoted unless otherwise specified. In all cases Statistics NZ must be acknowledged as the source.

Liability

While care has been used in processing, analysing and extracting information, Statistics NZ gives no warranty that the information supplied is free from error. Statistics NZ shall not be liable for any loss suffered through the use, directly or indirectly, of any information, product or service.

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 or higher, you may use the [Excel file viewer](#) to view, print and export the contents of the file.

1. Sheep numbers, 1994–2008
2. Lamb marked or tailed, 1994–2008
3. Dairy cattle numbers, 1994–2008
4. Beef cattle numbers, 1994–2008
5. Deer numbers, 1994–2008
6. Forestry, 1994–2008
7. Grain crops, 2003–08