



Hot Off The Press

LATEST STATISTICS FROM STATISTICS NEW ZEALAND

Embargoed until 10:45am – 3 April 2006

Agricultural Production Statistics (Final) June 2005

Highlights

At 30 June 2005:

- **Sheep numbers increased to 39.9 million**, up 2 percent from 2004.
- **Ewe hoggets put to ram were 3.2 million**, up 21 percent from 2004.
- **Manawatu-Wanganui region sheep, beef, dairy, and deer numbers rose**, following the flood-affected 2004 season.
- **The area planted in apples was 10,980 hectares**, down 6 percent from 2002.
- **Bay of Plenty continues to be the main kiwifruit and avocado growing region**, with 9,100 and 1,900 hectares, respectively.

Year to 30 June 2005:

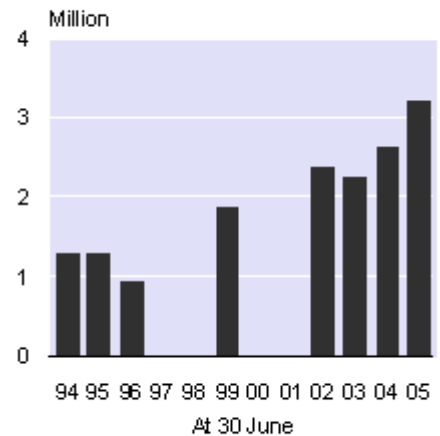
- **There were 11,030 hectares of potatoes harvested.**
- **There were 5,230 hectares of onions harvested**, down 7 percent from 2002.

Brian Pink
Government Statistician

3 April 2006
Cat 71.903 Set 05/06 – 166

There is a companion Media Release published – [Agricultural Production Statistics \(Final\): June 2005](#).

Ewe Hoggets Put to Ram
1994–2005



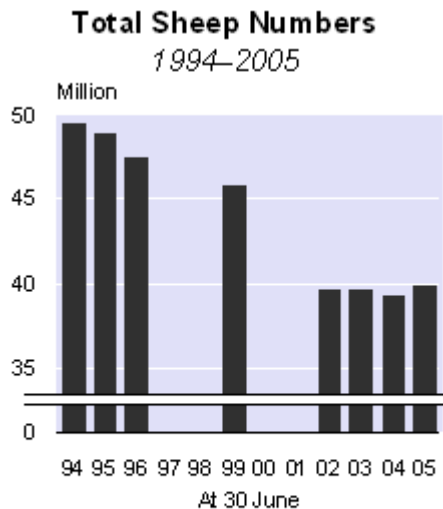
Note: No Agricultural Production Survey was conducted for 1997, 1998 or 2001. In 2000 the survey only related to horticulture.

Commentary

This release contains final data from the 2005 Agricultural Production Survey. This survey covered livestock and arable farming, horticulture, and forestry.

Sheep

Total sheep numbers were estimated at 39.9 million at 30 June 2005, up 2 percent on the 2004 figure. This is the first increase in total sheep numbers since the 1980s. From a peak in 1982 (70.3 million), sheep numbers showed a downward trend before stabilising from 2002.



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

The 2 percent increase in sheep numbers between 2004 and 2005 is due to the increased number of hoggets. Ewe hoggets put to ram reached 3.2 million, up 21 percent from 2004. The upward trend in ewe hoggets put to ram was reflected in the increased number of lambs marked or tailed from ewe hoggets. In the year to 30 June 2005, 1.4 million lambs were marked or tailed from ewe hoggets, up 27 percent on the previous year. Total lamb numbers were 33.2 million, up 4 percent on the 2004 figure.

Manawatu-Wanganui recorded the largest increase in sheep numbers, up 8 percent from the flood-affected 2004 year to reach 6.7 million. Canterbury has the largest number of sheep with 19 percent of the national total.

Beef

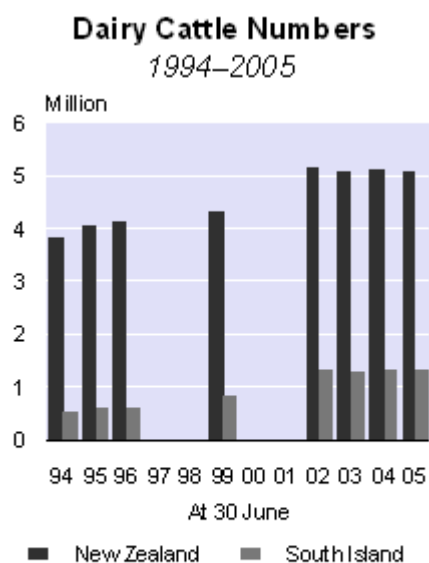
At 30 June 2005 beef cattle numbers remained stable at 4.4 million. Almost three-quarters of all beef cattle are in the North Island. The major regions are Manawatu-Wanganui and Waikato, with 697,000 and 679,000 head, respectively.

Dairy

Total dairy cattle numbers were estimated at 5.1 million in 2005. The number of dairy cows and heifers in milk or calf at 30 June 2005 was estimated at 4.1 million, the same as for the previous year.

Waikato is the main dairying region in the North Island, with 1.7 million dairy cattle, and Canterbury is the main dairying region in the South Island, with 605,000. The North Island has 73 percent of all dairy cattle.

Although North Island dairy cattle numbers have increased by 437,000 since 1994, its share of the national herd decreased from 85 percent in 1994 to 73 percent in 2005. Over the same period, the South Island increased its share from 15 percent to 27 percent. Numbers of dairy cattle in the South Island are now two and a half times 1994 numbers.



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

Users should note the revision to 2004 estimates for dairy cows and heifers in milk or calf (up 127,000 or 3 percent). This revision is the result of new information that has enabled an improvement in the survey estimate. Total dairy cattle numbers for 2004 are not affected.

Deer

Deer numbers at 30 June 2005 were estimated at 1.7 million, down 3 percent on the previous year. Canterbury, with 28 percent of New Zealand's total deer, was up 7 percent from 2004. The South Island now has 68 percent of the national deer herd, up from 50 percent in 1994.

The number of female deer mated was estimated at 821,000 in 2005, down 5 percent on 2004.

Deer estimates for 2004 and 2005 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 estimates.

Pigs

Pig numbers decreased to 341,000 in 2005, down 12 percent on the 2004 figure. North Island numbers fell 23 percent to 130,000. Together, the Waikato and Manawatu-Wanganui regions were the major contributors to the drop in the North Island figure. Industry groups and survey participants report various factors having contributed to the fall in pig numbers, including outbreaks of post-weaning multi-systemic wasting syndrome (PMWS) in the North Island, and record volumes of pork imports in 2005.

The region with the largest number (189,000) of pigs is Canterbury, with 55 percent of the national total in 2005.

Forestry

The reference date for forestry estimates has changed. In the 2005 survey a reference date of 31 March 2005 applied. This change was made to allow the forestry section of the Agricultural Production Survey to align more closely with the National Exotic Forest Determination Survey (NEFD) run by the Ministry of Agriculture and Forestry. Forestry reference dates since 1994 are shown in the table below:

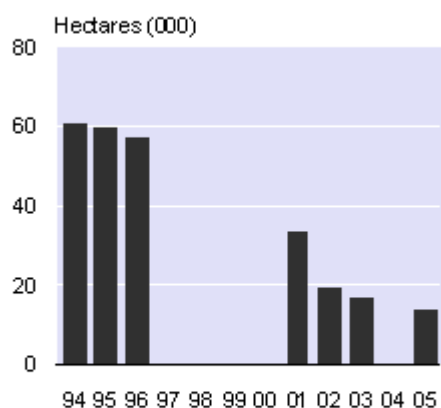
Survey	1994	1995	1996	2002	2003	2004	2005
Reference date	30 June 1994	30 June 1995	30 June 1996	31 December 2001	31 December 2002	31 December 2003	31 March 2005

There were 14,000 hectares of new forestry plantings during the year ended 31 March 2005. This is a decrease on the 15,900 hectares planted during the year to 31 December 2003.

There was also a decrease in area harvested, with 41,600 hectares harvested during the 12 months to 31 March 2005. There were 49,200 hectares harvested during the year to 31 December 2003.

New Area Planted in Production Forest

1994-2005



Note: No Agricultural Production Survey was conducted for 1997, 1998 or 2001. The 1999 survey related only to livestock and arable farming. In 2000 the survey related only to horticulture.

Horticulture

Horticulture information was collected in 2005 from all businesses whose main agricultural activity was horticulture. Additional horticultural activity undertaken on non-horticultural farms (eg livestock farms) has been estimated from a sample of these farms. Refer to the Technical Notes of this release for further information on the survey population and frame.

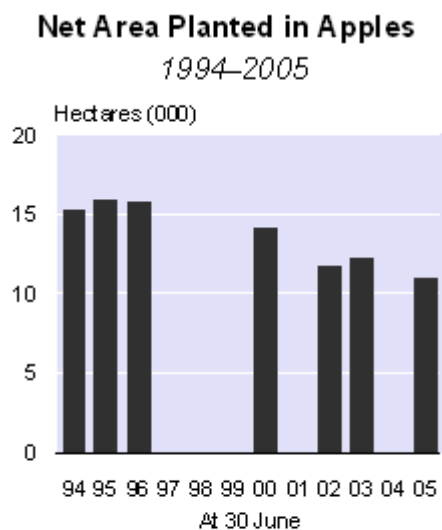
In 2002, horticulture information was collected from all businesses with horticultural production. The 2002 and 2005 horticulture figures have been used in this release for comparative purposes. The 2003 Agriculture Production Survey collected information from a sample of horticultural businesses.

Apples

Since 2002, the area planted has decreased by 740 hectares (6 percent). During this period, industry groups and survey respondents have reported global market conditions as being unfavourable for New Zealand apple exports.

Hawke's Bay is the major region planted in apples, with 6,070 hectares, 55 percent of the national total. Tasman has 26 percent, with 2,900 hectares.

The area planted in apples was estimated to be 10,980 hectares in 2005, down from 15,920 hectares in 1995.



Note: No Agricultural Production Survey was conducted for 1997, 1998 or 2001. In 1999 and 2004, the surveys were related to livestock, arable farming and forestry.

Pears

The area planted in pears decreased by one-quarter between 2002 and 2005. At 30 June 2005 there were 720 hectares of pears in New Zealand. The regions with the largest areas of pear plantings are Hawke's Bay and Tasman. The area planted in these regions decreased by 70 hectares and 30 hectares, respectively.

Peaches

The area planted in peaches fell from 810 hectares in 2002 to 550 hectares in 2005. The main regions contributing to this fall were Hawke's Bay and Otago where areas have fallen by a third. Changes in planted areas have been comparatively minor in other regions.

Kiwifruit

There were 12,030 hectares planted in kiwifruit in 2005, up 2 percent on 2002.

While the national figure has been relatively stable since 1994 when 12,170 hectares were estimated, there has been increased consolidation of the industry in the Bay of Plenty. This region, with 9,100 hectares now contains 76 percent of all kiwifruit plantings, up from 8,100 hectares or 67 percent of the national total in 1994.

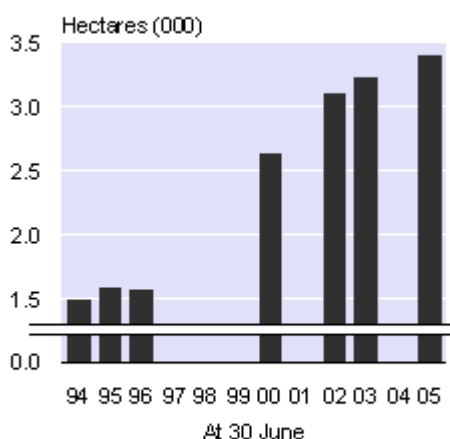
Contrary to the increase seen in the Bay of Plenty, the area of kiwifruit in Northland, Auckland, and Waikato has decreased. In 1994, the combined area planted in kiwifruit was 18 percent of the national total. By 2005 the area had decreased to 13 percent.

Avocados

The area planted in avocados continues to increase, reaching 3,400 hectares in 2005. This is up 9 percent on the 2002 figure, and is two and a half times the 1994 figure.

The Bay of Plenty, with 1,900 hectares, has 56 percent of the national total. This region, up 18 percent since 2002, is the major contributor to the national increase.

Net Area Planted in Avocados
1994–2005



Note: No Agricultural Production Survey was conducted for 1997, 1998 or 2001. In 1999 and 2004, the surveys were related to livestock, arable farming and forestry.

Mandarins

Between 2002 and 2005, the total area in mandarins decreased by 25 percent, from 910 hectares to 680 hectares. After peaking at 950 hectares in 2000, the 2005 figure is now at a similar level to that in 1995.

Almost three-quarters of the total area planted in mandarins is in Northland and Gisborne, with 250 and 240 hectares, respectively.

Onions

There were 5,230 hectares of onions harvested in New Zealand during the year to 30 June 2005, down from 5,620 hectares harvested in 2002. Auckland and Waikato are the major regions, with 62 percent of the national total. In 2005 the area harvested in both regions decreased.

Potatoes

There were 11,030 hectares of potatoes harvested in 2005, similar to the 11,080 hectares harvested in 2002. The largest growing region is Canterbury with 41 percent (4,560 hectares) of the national total, followed by Waikato (2,450 hectares) and Manawatu-Wanganui (1,870 hectares).

Changes between provisional and final results

Provisional results of the 2005 Agricultural Survey were released on 16 December 2005. Changes between the provisional final results for estimates at the national level are:

	Provisional	Final	% change
Ewe hoggets put to ram	3,222,200	3,211,000	0
Breeding ewes 2 tooth and over put to ram	26,463,900	26,421,000	0
Total sheep	39,910,600	39,928,000	0
Lambs born to ewe hoggets	1,393,600	1,360,000	-2
Lambs born to ewes	31,958,300	31,797,000	-1
Female deer mated	815,400	821,000	1
Total deer	1,711,500	1,705,000	0
Fawns born on the farm	648,100	648,000	0
Dairy cows and heifers in milk or calf	4,130,200	4,106,000	-1
Total dairy cattle	5,100,700	5,070,000	-1
Calves born alive to dairy heifers/cows	3,282,400	3,319,000	1
Total beef cattle	4,508,300	4,431,000	-2
Calves born alive to beef heifers/cows	1,029,100	1,023,000	-1
New area planted in forestry (hectares)	14,000	14,000	0
Area replanted in forestry (hectares)	42,200	41,200	-2
Exotic timber harvested (hectares)	45,100	41,600	-8
Exotic timber harvested (cubic metres)	19,772,700	18,187,100	-8

	Provisional	Final	% change
Net area planted in outdoor fruit (hectares)			
Apples	10,260	10,980	7
Pears	710	720	1
Peaches	530	550	4
Avocados	3,370	3,400	1
Mandarins	670	680	1
Olives	2,460	2,480	1
Harvested area of outdoor vegetables (hectares)			
Onions	5,060	5,230	3
Potatoes	10,260	11,030	8

For technical information contact:
 Jason Thomas or Adrian Cheung
 Auckland 09 920 9179
Email: info@stats.govt.nz

Technical notes

Background

This release contains final results from the 2005 Agricultural Production Survey.

This sample survey is part of an ongoing programme of agricultural production statistics conducted in partnership with the Ministry of Agriculture and Forestry.

Target population

The target population for the 2005 Agricultural Production Survey was all businesses engaged in 'agricultural production activity' (including livestock, cropping, horticulture and forestry) with the intention of selling that production, and/or that owned land which was intended for agricultural activity during the year ended 30 June 2005. Forestry activity was recorded for the year ended 31 March 2005.

In terms of the Australian and New Zealand Standard Industrial Classification (ANZSIC), the target population consists of:

- A01 Agriculture
- A0301 Forestry (excluding native forestry)

and parts of:

- A021900 Services to Agriculture nec (Grazing (with land))
- L771290 Commercial Property Operators and Developers nec (idle land)
- L781000 Scientific Research (Agriculture-related research that involves land holding (excl universities))
- N842300 Combined Primary and Secondary Education (Agricultural high school operation)
- N842400 Special School Education (Special needs education involving agricultural production activity)
- N843100 Higher Education (Agriculture-related research undertaken by universities that involves land holding)
- P931110 Horse and Dog Racing (Racing clubs and track operations)
- P931120 Horse and Dog Training for Racing (Racehorse training and racing stables operations)
- P923900 Recreational Parks and Gardens (eg Parks which farm or graze livestock).

The target population excluded:

- A015930 Beekeeping, and
- part of A015990 Livestock Farming nec (Worm farming, pet breeding, dog breeding, cat breeding, bird breeding (except poultry, game birds and ostriches)).

Survey population and frame

The 2005 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 following units have been included on the Business Frame:

- 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 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.

The eligible population for the 2005 Agricultural Production Survey was 65,000 enterprises.

Time series consistency

Population changes

Users should note changes to the population over time. In 1994, 1995, 1996, 2002 and 2003, the livestock, cropping, horticulture and forestry sectors were surveyed. The 2004 survey covered the livestock, cropping and forestry sectors (ie horticulture was excluded). In 1999 the survey covered livestock and cropping, while in 2000 the survey covered the horticultural sector only. The 2005 survey covers the livestock, cropping, horticulture and forestry sectors.

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 and 2005 surveys.

Questionnaire changes

Users should also be aware of changes in questionnaire design when making comparisons between 2005 and earlier years. A summary of major questionnaire changes relevant to this release are:

Forestry

- The reference date for forestry estimates has changed. In the 2005 survey a reference date of 31 March 2005 applies. This change was made to allow the forestry section of the Agricultural Production Survey align more closely with the National Exotic Forest Determination Survey (NEFD) run by the Ministry of Agriculture and Forestry.
- For the 2002 Census and the 2003 and 2004 surveys, the reference date was 31 December 2001, 2002 and 2003, respectively. Agricultural production collections prior to the 2002 Agriculture Production Census used a reference date of 30 June.

Fawns and velvet

- In the 2005 survey this question asked "how many fawns born on your farm were alive at four months?".
- Previously this question asked "how many fawns and calves were weaned on the farm?".

Deer

- This deer question was expanded in the 2005 Survey to include a more detailed sex/age breakdown:
females mated : 2 years and over
females mated : over 1 year but under 2 years
females NOT mated : 2 years and over
females NOT mated : over 1 year but under 2 years
females under 1 year old (include fawns still on the farm)
males under 1 year old (include fawns still on the farm)
non-breeding males : 2 years old and over
non-breeding males : over 1 year but under 2 years
breeding males : 2 years old and over
breeding males : over 1 year but under 2 years.
- Users should note that 2004 and 2005 deer figures 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 estimates for deer. While it is not possible to quantify the exact extent of this undercoverage, Statistics New Zealand estimates an undercount of about 70,000 deer at 30 June 2002 and 50,000 at 30 June 2003.

Footnotes are on the tables where questionnaire design changes may have had an impact on data comparisons.

Revisions to 2004 dairy cattle estimates

- Users should note the revisions to 2004 estimates relating to dairy cows and heifers in milk or calf. The national estimate of 4,103,000 has increased by 127,000 or 3% on the previously published figure. This revision is the result of new information which has enabled an improvement in estimates. Note that this revision does not affect total dairy cattle numbers for 2004.

Sample design

For the 2005 Agricultural Production Survey, a stratified sample design was used to select a sample from the population. In selecting this sample, the population was stratified using regional council, ANZSIC group, and size group. The size groups were determined as follows:

- For those businesses which responded to the 2002, 2003 or 2004 Agricultural collections, production data was used to form size groups. The variables used to determine size covered a range of livestock and cropping variables. Typically three size groups were formed: small, medium and large.
- For new businesses or those businesses who did not respond to the 2004 or 2003 Agricultural Production Survey and 2002 Agricultural Production Census, a random sample was taken. Annualised GST and land area (where available) were investigated for forming size groups, but these measures did not prove useful so this group was not stratified further.
- The 2005 Agriculture Production Survey has a sample size of 31,000 statistical units. There were 12,000 statistical units which were classified as engaging in predominately horticultural activity. The remaining units were engaged in predominately livestock, arable farming or forestry.
- Horticulture information was collected in 2005 from all businesses whose dominant activity was horticultural. Additional horticultural activity undertaken on non-horticultural farms (eg livestock farms) has been estimated from a sample of these farms.

Reliability of survey estimates

Errors are divided into two classes: **sampling error** and **non-sampling error**.

Sampling error arises from selecting a sample of businesses rather than taking a complete enumeration, and is not applicable when there is a census. Estimates for the 2005 survey, as for the 1995, 1996, 1999, 2003 and 2004 surveys, are subject to sampling error. The 1994 and 2002 Agricultural Production Censuses and the 2000 Horticultural Production Survey are not subject to 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 New Zealand adopts procedures to detect and minimise these types of errors, but they may still occur and are not easy to quantify.

Imputation

Statistics New Zealand has imputed values for farmers and growers in the 2005 Agricultural Production Survey 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, ANZSIC (Australian and New Zealand Standard Industrial Classification) group and previous 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.

Sampling error and imputation levels

The following table shows the final sampling error and imputation levels for the 2005 Agricultural Production Survey:

	Sample errors at 95% confidence interval (%)	Percentage of total estimate imputed
Breeding ewes, 2 tooth and over put to ram	5	10
Ewe hoggets put to ram	8	11
Total sheep	4	11
Lambs born to ewe hoggets	9	12
Lambs born to ewes	5	10
Beef cows and heifers (in calf)	7	12
Total beef cattle	4	12
Calves born alive to beef heifers/cows	6	11
Dairy cows and heifers, in milk or calf	6	13
Total dairy cattle	6	13

	Sample errors at 95% confidence interval (%)	Percentage of total estimate imputed
Calves born alive to dairy heifers/cows	11	13
Female deer mated	8	13
Total deer	8	13
Fawns or calves weaned on the farm	8	12
Total pigs	8	6
New area of forestry planted	20	12
Area replanted in forestry	4	1
Exotic timber harvested (hectares)	3	1
Exotic timber harvested (cubic metres)	2	1
Apples net area planted outdoors (hectares)	4	12
Pears net area planted outdoors (hectares)	5	7
Peaches net area planted outdoors (hectares)	2	8
Kiwifruit net area planted outdoors (hectares)	6	7
Avocados net area planted outdoors (hectares)	11	8
Mandarins net area planted outdoors (hectares)	3	8
Olives net area planted outdoor (hectares)	10	10
Onions area harvested (hectares)	14	5
Potatoes area harvested (hectares)	8	4

The sampling error in this table shows that, for example, there is a 95 percent chance that the true number of sheep in New Zealand at 30 June 2005 lies within 4 percent of the published estimate. This does not take into account non-sampling error.

The 2005 Agricultural Production Survey includes all statistical units whose main agricultural activity was horticulture. There is however, some horticultural activity on other farm types, such as livestock farms. The horticultural activity carried out on these farms has been estimated from a sample of these. There are sample errors associated with the horticultural activity carried out on these farms.

Survey response rates

The estimated proportion of eligible businesses responding to the 2005 Agricultural Production Survey is 87 percent. These businesses contribute 90 percent of the total agricultural output.

Confidentiality

Data collected and information contained in this publication must conform to the provisions of the Statistics Act 1975. This requires that published information maintains the confidentiality of individual respondents.

Copyright

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

More information

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

Liability

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

Rounding

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

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 New Zealand. Statistics New Zealand accepts no responsibility for any such delays.

Next release ...

Agricultural Production Statistics (Provisional): June 2006 will be released in December 2006.

Tables

The following tables can be downloaded from the Statistics New Zealand website in Excel 97 format. If you do not have access to Excel 97 or higher, you may use the [Excel file viewer](#) to view, print and export the contents of the file.

List of tables

1. Selected livestock numbers, by region
2. Sheep numbers, by region
3. Lamb numbers, by region
4. Beef cattle numbers, by region
5. Dairy cattle numbers, by region
6. Deer numbers, by region
7. Forestry, by region
8. Net area planted in outdoor fruit, by region
9. Harvested area of selected outdoor vegetables, by region