

# New Zealand Dairy Statistics 2023-24



Copyright in this publication (including text, graphics, logos and icons) is owned by or licensed to DairyNZ and LIC. Other than for the purposes of, and subject to the conditions prescribed under, the Copyright Act 1994 and similar legislation which applies in your location, and except as expressly authorised by these terms and conditions, you may not in any form or by any means adapt, reproduce, store, distribute, print, display, perform, publish or create derivative works from any part of this publication or commercialise any information, products or services obtained from any part of this publication without our written permission.

New Zealand Dairy Statistics is also available online, at no charge, at: [www.dairynz.co.nz](http://www.dairynz.co.nz)



LIC  
Private Bag 3016  
Hamilton 3240  
New Zealand  
Telephone: 64-7-856 0700  
Email: [communications@lic.co.nz](mailto:communications@lic.co.nz)  
Website: [www.lic.co.nz](http://www.lic.co.nz)



DairyNZ  
Private Bag 3221  
Hamilton 3240  
New Zealand  
Telephone: 0800 4 DAIRYNZ  
Email: [info@dairynz.co.nz](mailto:info@dairynz.co.nz)  
Website: [www.dairynz.co.nz](http://www.dairynz.co.nz)

# Contents

---

<b>1. Introduction.....</b>	<b>4</b>
1.1. Introduction .....	4
1.2. Executive Summary.....	5
1.2.1. Milk Production .....	5
1.2.2. Cow Numbers.....	5
1.2.3. Number of Dairy Herds and Herd Size.....	5
1.2.4. Herd Improvement .....	6
1.2.5. Cow Breed .....	6
1.2.6. Milk Prices.....	6
1.3. Commentary .....	7
<b>2. National dairy statistics.....</b>	<b>8</b>
2.1. Industry statistics .....	8
2.1.1. Production.....	8
2.1.2. Population.....	9
2.2. Herd production statistics.....	11
2.2.1. Production per cow and per hectare .....	12
2.2.2. Herd size distribution .....	13
<b>3. Regional dairy statistics .....</b>	<b>15</b>
3.1. Regions.....	15
3.2. Districts.....	17
3.3. Operating structures.....	21
3.4. Breed breakdown .....	25
<b>4. Herd improvement.....</b>	<b>27</b>
4.1. Use of herd testing.....	27
4.2. Herd test averages.....	29
4.2.1. Seasonal averages .....	29
4.2.2. Monthly averages.....	31
4.2.3. Breed category averages .....	33
4.3. Artificial Breeding (AB) statistics.....	36
4.4. Herd Reproduction.....	41
4.5. Calving .....	45
4.5.1. Planned start of calving and median calving dates.....	45
4.5.2. Calving interval .....	46
4.6. Animal Evaluation .....	47
4.6.1. Sire Evaluations.....	48
4.6.2. Cow Evaluations .....	50
<b>5. Prices received .....</b>	<b>55</b>
5.1. Milk prices.....	55
5.2. Dairy farm land prices.....	56
<b>6. Disease control.....</b>	<b>58</b>
6.1. Tuberculosis (Tb) control.....	58
<b>7. Appendices .....</b>	<b>60</b>
7.1. Appendix 1: Farming regions and districts.....	60

# List of tables

---

Table 2.1: Summary of milk production statistics.....	8
Table 2.2: Summary of herd statistics since 1975/76 .....	10
Table 2.3: Summary of herd production since 1975/76.....	11
Table 2.4: Average production per cow by herd size in 2023/24.....	13
Table 3.1: Herd analysis by region in 2023/24.....	16
Table 3.2: Herd production analysis by region in 2023/24.....	17
Table 3.3: Herd analysis by district in 2023/24 .....	17
Table 3.4: Herd production analysis by district in 2023/24.....	19
Table 3.5: Herd analysis by operating structure in 2023/24.....	21
Table 3.6: Herd production analysis by operating structure in 2023/24.....	22
Table 3.7: Trend in the percentage of herds in each operating structure for the last 10 seasons .....	22
Table 3.8: Trend in the number of herds in each operating structure for the last 10 seasons .....	22
Table 3.9: Operating structure by region in 2023/24 .....	23
Table 3.10: Operating structure by herd size in 2023/24.....	24
Table 4.1: Trend in the use of herd testing services.....	27
Table 4.2: Use of herd testing by region in 2023/24.....	28
Table 4.3: Season herd test averages per cow by region in 2023/24.....	29
Table 4.4: Trend in the national herd test averages .....	31
Table 4.5: Monthly herd test averages by region in 2023/24 .....	31
Table 4.6: Herd test averages by breed category and cow age in 2023/24.....	34
Table 4.7: Liveweight by age and by breed category of cow in 2023/24.....	35
Table 4.8: Cows and yearlings to AB.....	36
Table 4.9: Trend in mean herd reproductive performance.....	42
Table 4.10: Mean 6-week in-calf rate by farming region.....	43
Table 4.11: Actual 6-week in-calf rate in 2023/24.....	43
Table 4.12: Estimated 6-week in-calf rate in 2023/24.....	44
Table 4.13: Trend in mean calving interval by breed.....	46
Table 4.14: Economic values used from 17 May 2024.....	47
Table 4.15: Average Breeding Values and Breeding Worth of 2019 born bulls (BW reliability of 70% or greater) .....	48
Table 4.16: Number of Sires by birth year and breed category (reliability of BW 70% or greater, includes overseas bulls).....	49
Table 4.17: Herd Breeding Worth in 2023/24.....	50
Table 4.18: Herd Production Worth in 2023/24 .....	50
Table 4.19: Cow Breeding Worth in 2023/24.....	51
Table 4.20: Cow Production Worth in 2023/24 .....	52
Table 4.21: Average Breeding Worth and Breeding Values of all current cows born in 2021 by breed category .....	54
Table 4.22: Trend in survivability percentages (% of age group surviving to next lactation) .....	54
Table 5.1: Trend in prices received for milksolids.....	55
Table 5.2: Trend in dairy land sale values .....	56
Table 6.1: Tuberculosis (Tb) testing and results in 2023/24 .....	58

# List of graphs

---

Graph 2.1: Trend in the number of herds and average herd size .....	9
Graph 2.2: Milksolids production per cow and per effective hectare .....	12
Graph 2.3: Distribution of herds by milksolids production per cow.....	13
Graph 2.4: Herd size distribution for 2023/24 compared with that of 10 seasons ago .....	14
Graph 3.1: Regional distribution of dairy cows in 2023/24 .....	15
Graph 3.2: Breed category percentages of cows for New Zealand in 2023/24 .....	25
Graph 3.3: Breed category percentages of cows by region in 2023/24.....	25
Graph 3.4: Change in breed category percentages across time.....	26
Graph 4.1: Trend in the percentage of herds testing .....	28
Graph 4.2: Average milkfat and protein production per cow by region in 2023/24 .....	30
Graph 4.3: Liveweight by age and by breed category of cow in 2023/24.....	35
Graph 4.4: Trend in the percentage of cows to Artificial Breeding .....	38
Graph 4.5: Average number of inseminations per cow.....	38
Graph 4.6: Ayrshire semen usage (%) over breed category.....	39
Graph 4.7: Holstein-Friesian / Jersey Crossbreed semen usage (%) over breed category.....	39
Graph 4.8: Jersey semen usage (%) over breed category .....	40
Graph 4.9: Holstein-Friesian semen usage (%) over breed category .....	40
Graph 4.10: Trend in the percentage of inseminations of each breed category.....	41
Graph 4.11: Trend in mean actual and estimated 6-week in-calf rate.....	42
Graph 4.12: Distribution of actual 6-week in-calf rate in 2023/24.....	44
Graph 4.13: Distribution of estimated 6-week in-calf rate in 2023/24.....	44
Graph 4.14: Planned start of calving and median calving dates for cows (excluding first calvers) by region.....	45
Graph 4.15: Trend in planned start of calving dates for cows (excluding first calvers) by region.....	46
Graph 4.16: Genetic trend of proven dairy bulls by year of birth (BW reliability of 70% or greater) .....	48
Graph 4.16a: Number of Sires by year of birth (BW reliability of 70% or greater, includes overseas bulls) .....	49
Graph 4.17: Distribution of Herd Breeding Worth in 2023/24 .....	50
Graph 4.18: Distribution of Herd Production Worth in 2023/24.....	51
Graph 4.19: Distribution of Cow Breeding Worth in 2023/24 .....	51
Graph 4.20: Distribution of Cow Production Worth in 2023/24.....	52
Graph 4.21: Trend in Breeding Worth for all cows .....	53
Graph 4.22: Trend in Production Worth for all cows.....	53
Graph 5.1: Trend in milksolids payout to dairy farmers.....	56
Graph 5.2: Trend in dairy land sale price (\$/ha) .....	57
Graph 6.1: Trend in the number of infected herds since 2006/07 .....	59
Graph 6.2: Trend in the number of tuberculous dairy cattle since 2006/07 .....	59

# 1. Introduction

---

## 1.1. Introduction

**Kia ora and welcome to the 2023/24 edition of New Zealand Dairy Statistics.**

New Zealand Dairy Statistics is the annual census of the national dairy herd, providing the largest and most comprehensive range of statistical analyses on current, historical and emerging trends in the New Zealand dairy sector.

This report includes the latest milk production, herd improvement, animal evaluation and reproduction statistics with regional breakdowns.

The 2023/24 Dairy Statistics show a 0.5% increase in total milksolids production compared to the previous season, and the continuation of the trend towards fewer but larger herds. Milksolids production per cow remains at near record levels, supported by ongoing improvements in Breeding Worth and Production Worth across all dairy cow breeds. The proportion of Holstein-Friesian/Jersey Crossbreed cows continued to rise, reaching 60.4% in 2023/24. However, unlike in previous years, the percentage of herd-tested cows and those artificially inseminated both declined, likely reflecting the economic challenges farmers faced during the 2023/24 season.

New Zealand dairy farmers continued to demonstrate resilience throughout a challenging year, most notably in the form of rising input costs. Despite these challenges, farmers can take pride in their ongoing contributions to rural communities and New Zealand's economy. The sector's efforts to explore new solutions for improving herd productivity are also noteworthy, reflecting a strong commitment to maintaining global competitiveness.



Campbell Parker  
Chief Executive  
DairyNZ



David Chin  
Chief Executive  
Livestock Improvement Corporation

This report has been jointly produced by DairyNZ and Livestock Improvement Corporation (LIC) since 2006/07.

LIC is a farmer-owned co-operative and world leader in pasture based dairy genetics and herd management. LIC exists to deliver superior genetics and technological innovation to help its shareholders sustainably farm profitable animals.

DairyNZ is the industry good organisation representing New Zealand's dairy farmers, funded by farmers through a levy on milksolids. DairyNZ helps farmers build sustainable businesses through research, innovation, and advocacy.

Data is sourced from the LIC Herd Improvement Database, New Zealand dairy companies, Dairy Industry Good Animal Database, Animal Evaluation database, TB Free New Zealand, Real Estate Institute of New Zealand, and Statistics New Zealand.

## 1.2. Executive Summary

This year's report highlights a 0.5% increase in total milksolids production for 2023/24, driven by a 0.57% rise in cow numbers, while the trend towards fewer but larger herds continued this season.

The number of cows herd-tested and artificially inseminated declined in 2023/24, following record levels in the previous season. This decrease may be linked to the economic challenges farmers have faced in recent years. Although, the 2023/24 co-operative payout (\$8.90/kg milksolids) was higher than the five-year average (\$8.43/kg milksolids), when adjusted for inflation, the 2023/24 payout was \$0.35 below the five-year inflation-adjusted average of \$9.25 per kg milksolids.

Changes in total national milksolids production indicate that farmers are focused on rearing high-producing cows with good milk quality. This is shown by record-high percentages of milkfat and protein in herd-tested cows, alongside the lowest-ever average somatic cell count of 161,000 cells/mL in 2023/24.

In the 2023/24 season, some updates were made to the methodology for collecting and estimating farm size and herd size data. Some milk processors made changes to data collection methods relating to farm size and herd size to enhance accuracy. These methodological changes may have contributed to larger-than-usual fluctuations in farm size, herd size and associated values. Additionally, corresponding data for the 2022/23 season was updated in the 2023/24 version of Dairy Statistics.

### 1.2.1. Milk Production

In the 2023/24 season, dairy companies processed 20.5 billion litres of milk containing 1.88 billion kilograms of milksolids. Compared with the previous season, this was a 0.8% (~161 million litres) decrease in litres and a 0.5% (~9 million kg) increase in kilograms of milksolids processed. This reflects a greater proportion of milksolids in the milk processed.

Average milk production per cow across the country was 400 kilograms of milksolids (made up of 225 kilograms milkfat and 176 kg protein). Average milksolids per effective hectare (1,105 kg) was near 2020/21 levels.



### 1.2.2. Cow Numbers

Cow numbers increased by 0.6% in 2023/24, reaching 4.7 million, though this is still 2% below the five-year average of 4.8 million.



### 1.2.3. Number of Dairy Herds and Herd Size

The average herd size increased and the number of herds decreased.

There were 10,485 herds this season – 116 fewer than the previous season. The national average herd size was 448, which was seven cows more than the previous season.



## 1.2.4. Herd Improvement

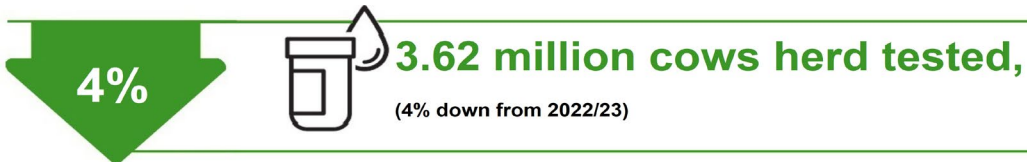
### 1.2.4.1. Herd Testing - knowing your cows

The number of cows herd tested decreased.

Herd testing enables farmers to collect information about individual cows in their herds – this includes information on milk production, milksolid makeup and somatic cell count (an indicator of mastitis). The information gained from herd testing is used for effective herd management, monitoring and improving cow wellbeing and on-farm decision making.

Herd testing data is also used (alongside other animal data) to inform animal evaluation. These are the critical evaluations that help farmers identify the best animals for breeding, which lifts the performance of their herds.

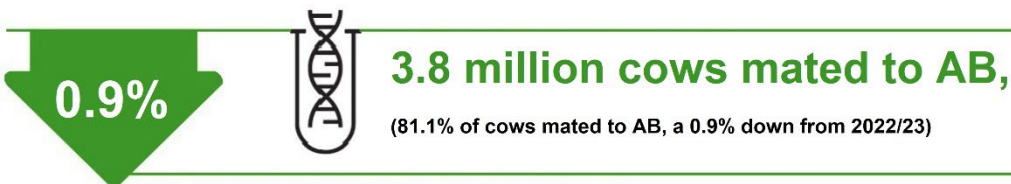
A total of 3.62 million cows were herd tested in 2023/24 – a 4% decrease from the previous season. That equates to 77.1% of cows in the national herd being herd tested in 2023/24. The percentage of total herds tested (74%) was lower than the five-year average of 74.8%.



### 1.2.4.2. Artificial Breeding – creating genetic gain through the next generation

The percentage of cows mated to artificial breeding (AB) decreased, while the number of cows mated to AB increased.

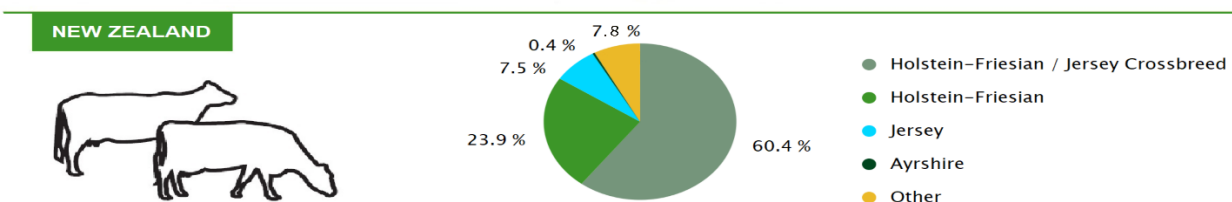
There were 3.8 million cows mated to AB in 2023/24. The percentage of cows mated to AB decreased from 82.0% in 2022/23 to 81.1% in 2023/24 and was slightly lower than the five-year average of 81.5%.



## 1.2.5. Cow Breed

Approximately 60% of cows are Holstein-Friesian/Jersey Crossbred.

Farmers are increasingly shifting to crossbred cows to benefit from the efficiencies of hybrid vigour and get the best traits from the two main dairy breeds. In total, 60.4% of cows were Holstein-Friesian/Jersey Crossbred, a 0.5% increase from the previous season, followed by Holstein-Friesian cows and Jersey cows, with 23.9% and 7.5% of all cows, respectively.



## 1.2.6. Milk Prices

The average dairy co-operative payout was \$8.90 per kilograms of milksolids.

The average dairy co-operative payout in 2023/24 (\$8.90 per kg milksolids) was \$0.47 above the five-year average of \$8.43. When adjusted for inflation, the 2023/24 payout was \$0.35 below the five-year inflation-adjusted average of \$9.25 per kg milksolids.





## 1.3. Commentary

Over the last decade, the New Zealand dairy sector has undergone significant structural change, marked by approximately a 12% reduction in herd numbers and a 5% decrease in the number of milking cows. Despite these reductions, total milksolids processed have remained stable, ranging between 1.82 and 1.94 billion kilograms of milksolids. This stability reflects ongoing improvements in productivity, with farmers producing more milksolids per cow. Average herd sizes have increased, suggesting smaller herds are exiting the sector or merging into bigger herds. Data from Graph 2.4 highlights a notable decline in the proportion of herds sized between 100 and 250 cows over the past decade, and previous publications indicate this is a trend over time.

Interestingly, the reduction in cow numbers in the past decade exceeds the reduction in hectares, indicating that while some farms have transitioned to alternative land uses, many have been acquired by other dairy farmers. The proportion of herds in different operating structures has remained relatively stable over the past five seasons. However, owner-operators have accounted for most of the decline in herd numbers, which may be linked to retirement trends among landowners. This shift is also driving small increases in the use of contract milkers and sharemilkers.

The national herd composition has evolved towards a growing preference for crossbreed genetics. The proportion of Holstein-Friesian/Jersey Crossbreeds has increased significantly, from 34% in 2005/06 to 60% in 2023/24. These genetic preferences are yielding tangible results for dairy farmers, such as a record-high average days in milk (277 days in 2023/24), contributing to elevated milksolids production. Somatic cell counts have continued their downward trend, achieving record lows in October and November 2023, reflecting improvements in milk quality during peak production, a continued focus on animal health, and greater use of herd-monitoring technologies.

Genetic advancements are also evident in Breeding Worth (BW), with increases across all breeds, and Jersey cows achieving the highest average BW among the breeds. These genetic gains were supported by favourable weather conditions in 2023/24, which led to good grass growth for many regions. Furthermore, reproductive performance reached new levels, with 6-week-in-calf rates hitting a record high of 69%. These structural and genetic trends underscore the resilience and adaptability of the New Zealand dairy sector, which clearly focuses on productivity, quality, and sustainable performance.

# 2. National dairy statistics

## 2.1. Industry statistics

### 2.1.1. Production

- For the second consecutive season, milk volume declined while milksolids production increased.

In 2023/24, dairy companies processed 20.5 billion litres of milk containing 1.882 billion kilograms of milksolids compared to 1.873 billion kilograms processed in the previous season (Table 2.1). Since 2013/14 milksolids processed has been in the range of 1.8 to 1.9 billion kilograms.

Table 2.1: Summary of milk production statistics

Season	Milk processed (million litres)	Milkfat processed (million kgs)	Protein processed (million kgs)	Milksolids processed (million kgs)
1987/88	6,921	333	245	579
1988/89	6,533	311	237	541
1989/90	6,868	330	242	572
1990/91	7,077	343	254	599
1991/92	7,454	365	270	637
1992/93	7,629	373	277	651
1993/94	8,603	423	313	736
1994/95	8,633	422	311	733
1995/96	9,325	452	335	788
1996/97	10,339	506	375	880
1997/98	10,651	513	378	891
1998/99	10,563	503	377	880
1999/00	11,630	560	421	981
2000/01	12,925	626	470	1,096
2001/02	13,607	657	495	1,152
2002/03	13,906	676	515	1,191
2003/04	14,599	716	538	1,254
2004/05	14,103	694	519	1,213
2005/06	14,702	724	543	1,267
2006/07	15,134	750	566	1,316
2007/08	14,745	722	548	1,270
2008/09	16,044	791	602	1,393
2009/10	16,483	817	622	1,438
2010/11	17,339	859	654	1,513
2011/12	19,129	954	731	1,685
2012/13	18,883	939	719	1,658
2013/14	20,657	1,034	791	1,825
2014/15	21,253	1,067	823	1,890
2015/16	20,914	1,050	812	1,862
2016/17	20,702	1,042	809	1,851
2017/18	20,724	1,035	804	1,840
2018/19	21,217	1,056	828	1,884
2019/20	21,145	1,059	836	1,896

Season	Milk processed (million litres)	Milkfat processed (million kgs)	Protein processed (million kgs)	Milksolids processed (million kgs)
2020/21	21,705	1,089	858	1,947
2021/22	20,776	1,047	821	1,868
2022/23	20,702	1,049	824	1,873
2023/24	20,541	1,056	826	1,882

Note:

- Prior to 1998/99, milk production statistics (provided by the New Zealand Dairy Board) only represented milk processed into export products and excluded milk supplied to the domestic market.
- From 1998/99, milk production statistics include all milk processed by New Zealand dairy companies, including milk for the domestic market.

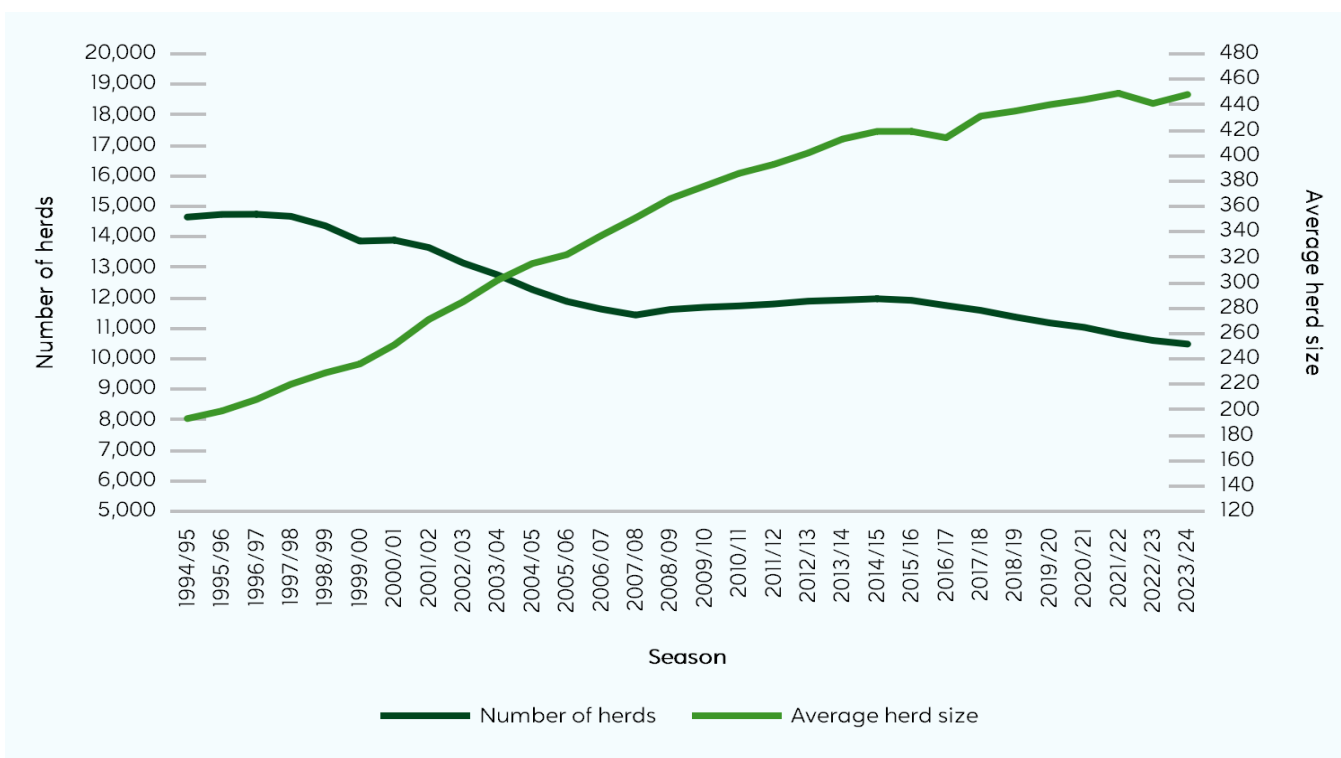
## 2.1.2. Population

- Number of herds decreased.
- Average herd size increased.

Between 1997-98 and 2007-08 the total number of herds declined by about 300 per season (Graph 2.1). Between 2008/09 and 2014/15 the total number of herds increased by around 76 herds per year. Since 2015/16 the total number of herds have steadily declined by approximately 165 herds per year, reaching 10,485 in 2023/24.

The average herd size has shown a steady upward trend over the years. Over the past five seasons the average herd size has experienced slight fluctuations despite appearing to have plateaued during this period, reaching 448 in 2023/24.

Graph 2.1: Trend in the number of herds and average herd size



Note:

- Before 2022/23, herd size data was primarily sourced from LIC records, supplemented by data from dairy processors. From 2022/23 onward, it is mainly based on data from dairy processors, with supplementary data from LIC.

In 2023/24, changes were made to the methodology for collecting and estimating farm size and herd size data to enhance accuracy, this update has resulted in larger-than-usual variations in total effective hectares, average farm size and therefore stocking rate. These fluctuations are not expected to persist in future seasons.

Total cows have fluctuated slightly over the last 10 years, peaking at 5.02 million in 2014/15 before dropping to 4.70 million in 2023/24 (Table 2.2). The average farm size (effective hectares) continued to rise, from 151 in 2017/18 to 162 in 2023/24. Total effective hectares (milking platform with support block excluded) peaked and remained stable between 2014/15 and 2018/19, before decreasing from 1.74 million hectares in 2018/19 to 1.70 million in 2023/24.

Table 2.2: Summary of herd statistics since 1975/76

Season	Herds	Total cows	Total effective hectares	Average herd size	Average effective hectares	Average cows per hectare
1975/76	18,442	2,091,950	-	113	-	-
1980/81	16,089	2,027,096	-	126	-	-
1985/86	15,753	2,321,012	1,008,192	147	64	2.30
-	-	-	-	-	-	-
1990/91	14,685	2,402,145	1,023,545	164	70	2.35
1991/92	14,452	2,438,641	-	169	-	-
1992/93	14,458	2,603,049	1,069,892	180	74	2.43
1993/94	14,597	2,736,452	1,122,509	188	77	2.44
1994/95	14,649	2,830,977	1,175,940	193	80	2.41
1995/96	14,736	2,935,759	1,208,352	199	82	2.43
1996/97	14,741	3,064,523	1,267,726	208	86	2.42
1997/98	14,673	3,222,591	1,276,551	220	87	2.52
1998/99	14,362	3,289,319	1,306,942	229	91	2.52
1999/00	13,861	3,269,362	1,292,566	236	93	2.53
2000/01	13,892	3,485,883	1,329,173	251	96	2.62
2001/02	13,649	3,692,703	1,404,930	271	103	2.63
2002/03	13,140	3,740,637	1,463,281	285	111	2.56
2003/04	12,751	3,851,302	1,421,147	302	111	2.71
2004/05	12,271	3,867,659	1,411,594	315	115	2.74
2005/06	11,883	3,832,145	1,398,966	322	118	2.74
2006/07	11,630	3,916,812	1,412,925	337	121	2.77
2007/08	11,436	4,012,867	1,436,549	351	126	2.79
2008/09	11,618	4,252,881	1,519,117	366	131	2.80
2009/10	11,691	4,396,675	1,563,495	376	134	2.81
2010/11	11,735	4,528,736	1,638,706	386	140	2.76
2011/12	11,798	4,634,226	1,638,546	393	139	2.83
2012/13	11,891	4,784,250	1,677,395	402	141	2.85
2013/14	11,927	4,922,806	1,716,464	413	144	2.87
2014/15	11,970	5,018,333	1,746,156	419	146	2.87
2015/16	11,918	4,997,811	1,751,704	419	147	2.85
2016/17	11,748	4,861,324	1,728,702	414	147	2.81
2017/18	11,590	4,992,914	1,755,148	431	151	2.84
2018/19	11,372	4,946,305	1,743,673	435	153	2.84
2019/20	11,179	4,921,548	1,730,374	440	155	2.84
2020/21	11,034	4,903,733	1,713,515	444	155	2.86
2021/22	10,796	4,842,122	1,701,380	449	158	2.85
2022/23	10,601	4,674,750	1,659,430	441	157	2.82
2023/24	10,485	4,701,596	1,703,404	448	162	2.76

## Note:

- Data not available is indicated with a long dash (-).
- Total effective hectares between 1981/82 and 1999/00 are estimates.
- Average effective hectares and average cows per hectare for 1981/82 to 1990/91 are based on factory supply herds only.
- The number of cows used to calculate the average herd size since 1992/93 includes all cows lactating in that season, whereas in earlier years the number of cows used to produce the average herd size was based only on those cows lactating on 31 December. This change in method has had a small effect on reported cow numbers.
- The 2022/23 season national statistics were revised by updating the averaging methodology in the 2023/24 publication to ensure tables reconcile.
- In 2023/24, changes were made to the methodology for collecting and estimating farm size and herd size data to enhance accuracy, this update has resulted in larger-than-usual variations in total effective hectares, average farm size and stocking rate.

## 2.2. Herd production statistics

- Milksolids production per herd was the highest on record.
- Milksolids production per cow and per effective hectare remain stable.

Milksolids production per herd has increased in most years since 1992/93, except for 1998/99, 2007/08, 2012/13, and 2021/22, with the first three being drought-affected seasons (Table 2.3). In 2023/24, milksolids production per herd reached a record high of 179,525 kg, approximately 26% above the 5-year average. The average milksolids production per hectare in 2023/24 was 1,105 kg, equivalent to the 5-year average but about 3% lower than the record high of 1,137 kg in 2020/21. Meanwhile, the average milksolids production per cow in 2023/24 (400 kg/cow) was the second highest on record, just behind the 401 kg per cow in 2022/23.

Table 2.3: Summary of herd production since 1975/76

Season	Average litres per herd	Average kg milkfat per herd	Average kg protein per herd	Average kg milk solids per herd	Average kg milkfat per effective hectare	Average kg protein per effective hectare	Average kg milk solids per effective hectare	Average litres per cow	Average kg milkfat per cow	Average kg protein per cow	Average kg milk solids per cow
1975/76	-	15,700	-	-	-	-	-	-	137	-	-
1980/81	-	18,864	-	-	-	-	-	-	147	-	-
1985/86	-	23,489	-	-	379	-	-	-	157	-	-
-	-	-	-	-	-	-	-	-	-	-	-
1990/91	-	24,495	-	-	351	-	-	-	148	-	-
1991/92	-	26,567	-	-	-	-	-	-	157	-	-
1992/93	554,040	26,982	20,138	47,120	374	279	653	-	148	111	259
1993/94	618,139	30,220	22,458	52,678	407	301	708	-	160	119	278
1994/95	614,203	29,886	22,117	52,002	386	285	671	-	156	115	271
1995/96	663,248	32,050	23,827	55,877	405	300	705	-	163	120	283
1996/97	728,874	35,436	26,387	61,823	425	316	741	-	173	128	301
1997/98	752,399	36,383	26,984	63,367	430	318	748	-	168	124	292
1998/99	735,544	35,047	26,254	61,301	392	292	684	-	147	109	256
1999/00	839,066	40,365	30,396	70,761	439	329	768	-	165	123	288
2000/01	930,047	45,063	33,850	78,914	472	353	825	-	177	133	310
2001/02	996,904	48,137	36,300	84,436	471	353	824	-	175	132	307
2002/03	1,058,307	51,447	39,174	90,621	471	357	828	-	179	136	315
2003/04	1,144,938	56,150	42,171	98,321	509	380	889	3,737	184	138	322
2004/05	1,149,262	56,520	42,305	98,825	494	368	862	3,574	176	132	308
2005/06	1,237,228	60,955	45,705	106,660	520	387	907	3,763	186	139	325
2006/07	1,301,308	64,495	48,687	113,182	534	400	934	3,791	189	142	330
2007/08	1,289,337	63,158	47,876	111,033	498	375	873	3,567	175	132	307
2008/09	1,381,573	68,116	51,850	119,966	524	396	921	3,710	184	139	323
2009/10	1,409,875	69,859	53,184	123,043	519	392	912	3,642	181	137	318
2010/11	1,477,531	73,184	55,762	128,946	524	399	923	3,829	190	144	334
2011/12	1,621,344	80,875	61,936	142,811	582	446	1,028	4,128	206	158	364
2012/13	1,587,980	78,948	60,462	139,410	560	429	988	3,947	196	150	346
2013/14	1,731,985	86,682	66,330	153,012	602	461	1,063	4,196	210	161	371
2014/15	1,775,501	89,152	68,734	157,886	611	471	1,082	4,235	213	164	377
2015/16	1,754,836	88,132	68,091	156,223	600	463	1,063	4,185	210	162	372
2016/17	1,762,152	88,667	68,892	157,560	603	468	1,071	4,259	214	167	381
2017/18	1,788,051	89,320	69,413	158,733	590	458	1,048	4,151	207	161	368
2018/19	1,865,731	92,868	72,806	165,674	606	475	1,081	4,290	214	167	381

Season	Average litres per herd	Average kg milkfat per herd	Average kg protein per herd	Average kg milk solids per herd	Average kg milkfat per effective hectare	Average kg protein per effective hectare	Average kg milk solids per effective hectare	Average litres per cow	Average kg milkfat per cow	Average kg protein per cow	Average kg milk solids per cow
2019/20	1,891,481	94,770	74,824	169,595	612	483	1,096	4,296	215	170	385
2020/21	1,967,106	98,681	77,822	176,503	635	501	1,137	4,426	222	175	397
2021/22	1,924,392	96,993	76,001	172,994	615	482	1,098	4,291	216	169	386
2022/23	1,952,790	98,966	77,718	176,683	632	496	1,129	4,428	224	176	401
2023/24	1,959,051	100,723	78,803	179,525	620	485	1,105	4,369	225	176	400

Note:

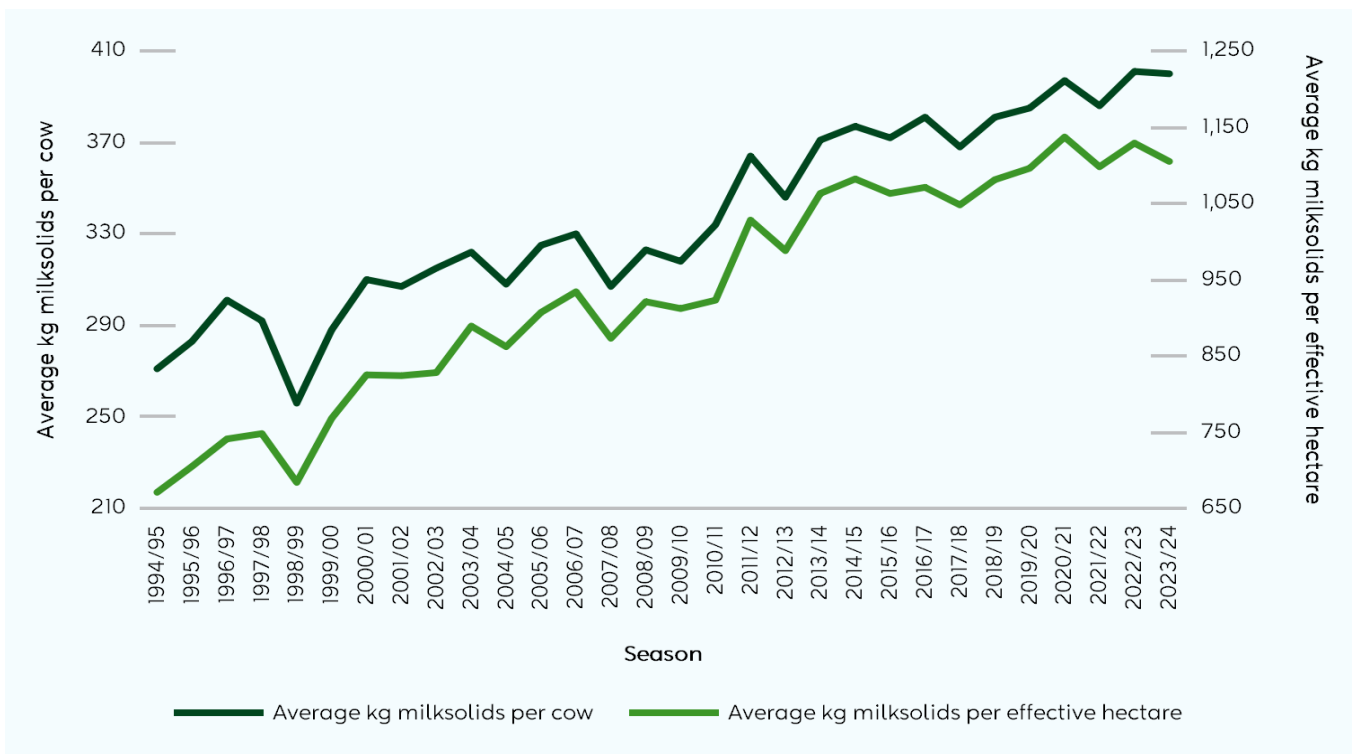
- Data not available is indicated with a long dash (-).
- Values prior to 1991/92 exclude town milk herds.
- 1991/92 values include some town milk herds.

## 2.2.1. Production per cow and per hectare

Seasonal milksolids production is heavily influenced by weather conditions; for example, widespread droughts in 2007/08 and 2012/13 led to declines in milk production, while favorable pasture growth and increased supplementary feed in 2013/14 enabled high production levels (Graph 2.2).

Despite annual fluctuations, recent milksolids production per cow and per hectare remain high, near record levels. In 2023/24, milksolids production per cow reached 400 kg, 1.6% above the 5-year average of 394 kg, while milksolids production per hectare was 1,105 kg, 0.7% below the 5-year average of 1,113 kg. Milksolids production per hectare in 2023/24 could have also been influenced by a change in the methodology used to estimate effective hectares per farm.

Graph 2.2: Milksolids production per cow and per effective hectare

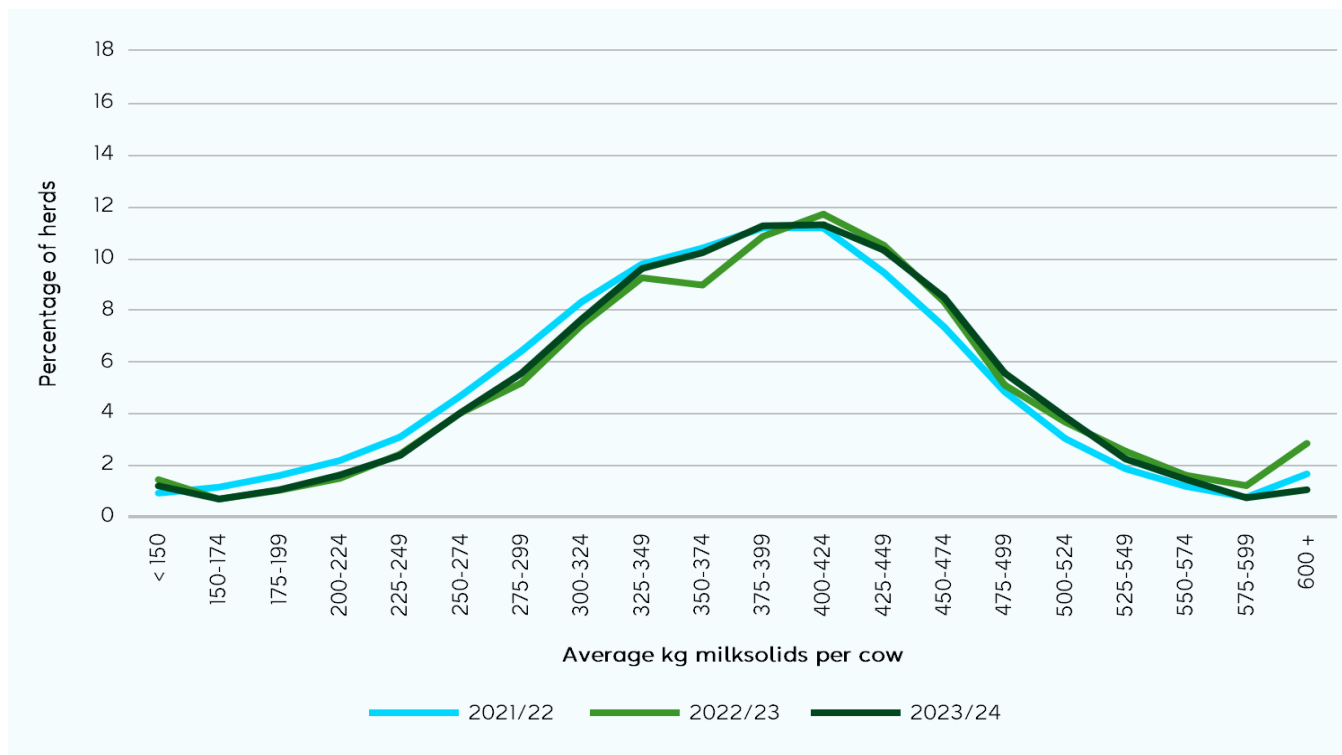


Average milksolids production per cow varies significantly from farm to farm. This variation is determined by factors such as temperature, rainfall, soil fertility (which influences pasture growth), stocking rate, herd genetic merit, supplementary feed levels, and farm management practices.

Graph 2.3 shows the distribution of milksolids production per cow in 2023/24, alongside data from the previous two seasons.

Milksolids production per cow across 2021/22, 2022/23, and 2023/24 shows a consistent concentration in the 325–449 kg range, with 51% to 53% of herds in this range, with the highest percentage of herds falling in the 375–399 kg and 400–424 kg categories (11% of herds each). Approximately 3% to 4% of herds had an average milksolids production below 200 kg per cow, while 3% to 6% of herds produced 550 kg per cow or more.

Graph 2.3: Distribution of herds by milksolids production per cow



## 2.2.2. Herd size distribution

- 54% of herds had fewer than 400 cows.
- 16% of herds had 700 or more cows.
- 6% of herds had 1,000 or more cows.

In the 2023/24 season, herd size distributions were similar to the previous season with 14% of herds having fewer than 200 cows, 54% had fewer than 400 cows, 33% had 500 or more cows, 16% had 700 or more cows, and 6% had 1,000 or more cows (Table 2.4). The average milksolids per cow were 329 kg for herds with fewer than 400 cows, 409 kg for herds with 400 to 700 cows, and 420 kg for herds with more than 700 cows. The highest average milksolids per cow are found in herds of 900 to 949 cows. However, for herds larger than 950 cows, average milksolids production starts to decline.

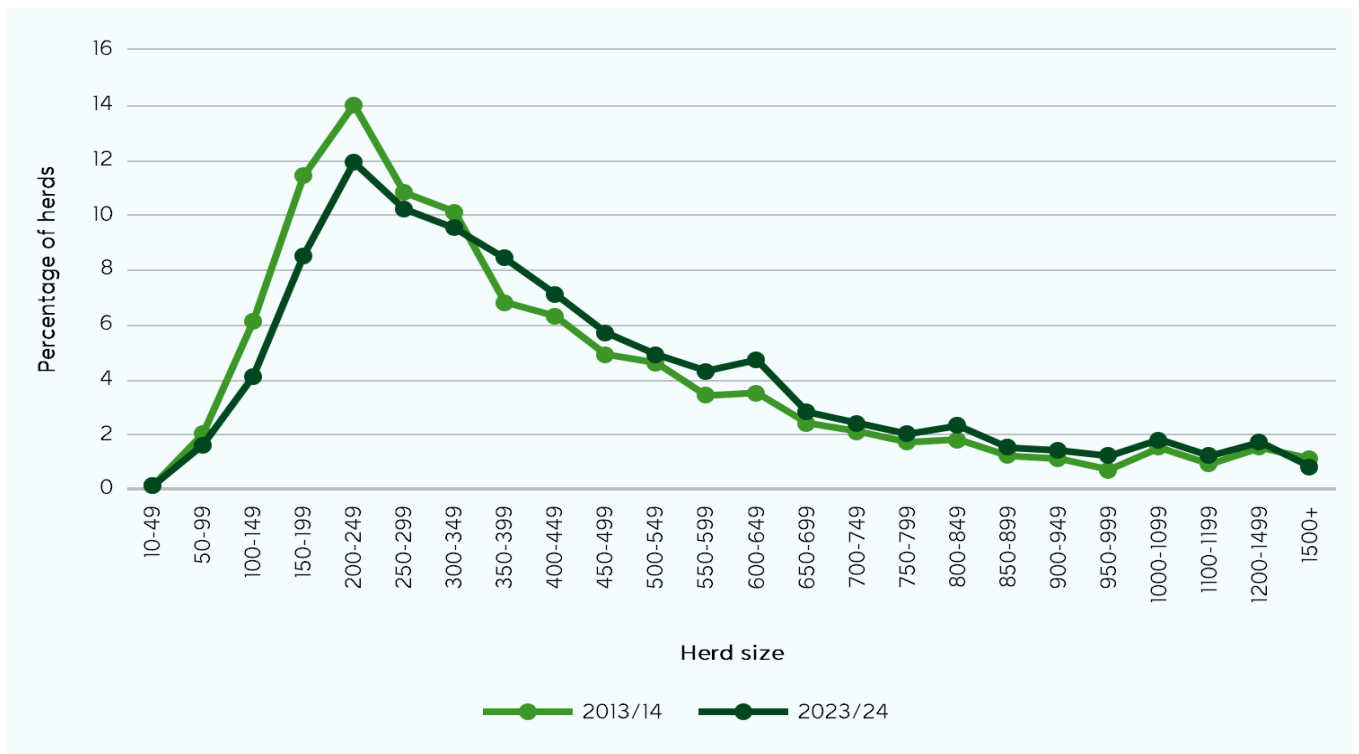
Table 2.4: Average production per cow by herd size in 2023/24

Herd size	Number of herds	Percentage of herds	Number of cows	Percentage of cows	Average kg milkfat per cow	Average kg protein per cow	Average kg milksolids per cow
10-49	9	0.1	396	0.0	136	102	238
50-99	163	1.6	12,961	0.3	125	96	222
100-149	435	4.1	55,009	1.2	177	137	314
150-199	888	8.5	155,144	3.3	199	154	353
200-249	1,247	11.9	277,327	5.9	208	161	369

Herd size	Number of herds	Percentage of herds	Number of cows	Percentage of cows	Average kg milkfat per cow	Average kg protein per cow	Average kg milksolids per cow
250-299	1,065	10.2	289,234	6.2	210	162	373
300-349	999	9.5	319,617	6.8	211	164	375
350-399	883	8.4	325,927	6.9	218	168	386
400-449	744	7.1	312,589	6.6	223	174	397
450-499	596	5.7	279,917	6.0	221	172	393
500-549	510	4.9	264,785	5.6	227	178	405
550-599	446	4.3	254,721	5.4	231	182	413
600-649	493	4.7	305,197	6.5	235	183	418
650-699	298	2.8	199,580	4.2	238	188	426
700-749	255	2.4	183,205	3.9	236	187	423
750-799	211	2.0	162,184	3.4	240	190	430
800-849	236	2.3	193,269	4.1	239	189	428
850-899	158	1.5	137,009	2.9	242	190	432
900-949	147	1.4	134,951	2.9	242	191	433
950-999	125	1.2	121,388	2.6	233	184	418
1000-1099	193	1.8	200,382	4.3	233	184	417
1100-1199	125	1.2	142,396	3.0	233	184	418
1200-1499	178	1.7	233,529	5.0	229	181	410
1500+	81	0.8	140,879	3.0	220	176	395
<b>Total/Avg</b>	<b>10,485</b>	<b>100</b>	<b>4,701,596</b>	<b>100</b>	<b>225</b>	<b>176</b>	<b>400</b>

Graph 2.4 illustrates the distribution of herd sizes in 2023/24, compared to data from ten seasons ago. Over the past decade, the proportion of herds with fewer than 200 cows decreased from 20% to 14%, and the percentage of herds with fewer than 350 cows dropped from 55% to 46%. Meanwhile, the proportion of herds with 500 cows or more increased from 28% to 33%. The most common herd size remains in the range of 200 to 249 cows, which accounted for 11.9% of herds in 2023/24 (compared to 14% in 2013/14).

Graph 2.4: Herd size distribution for 2023/24 compared with that of 10 seasons ago





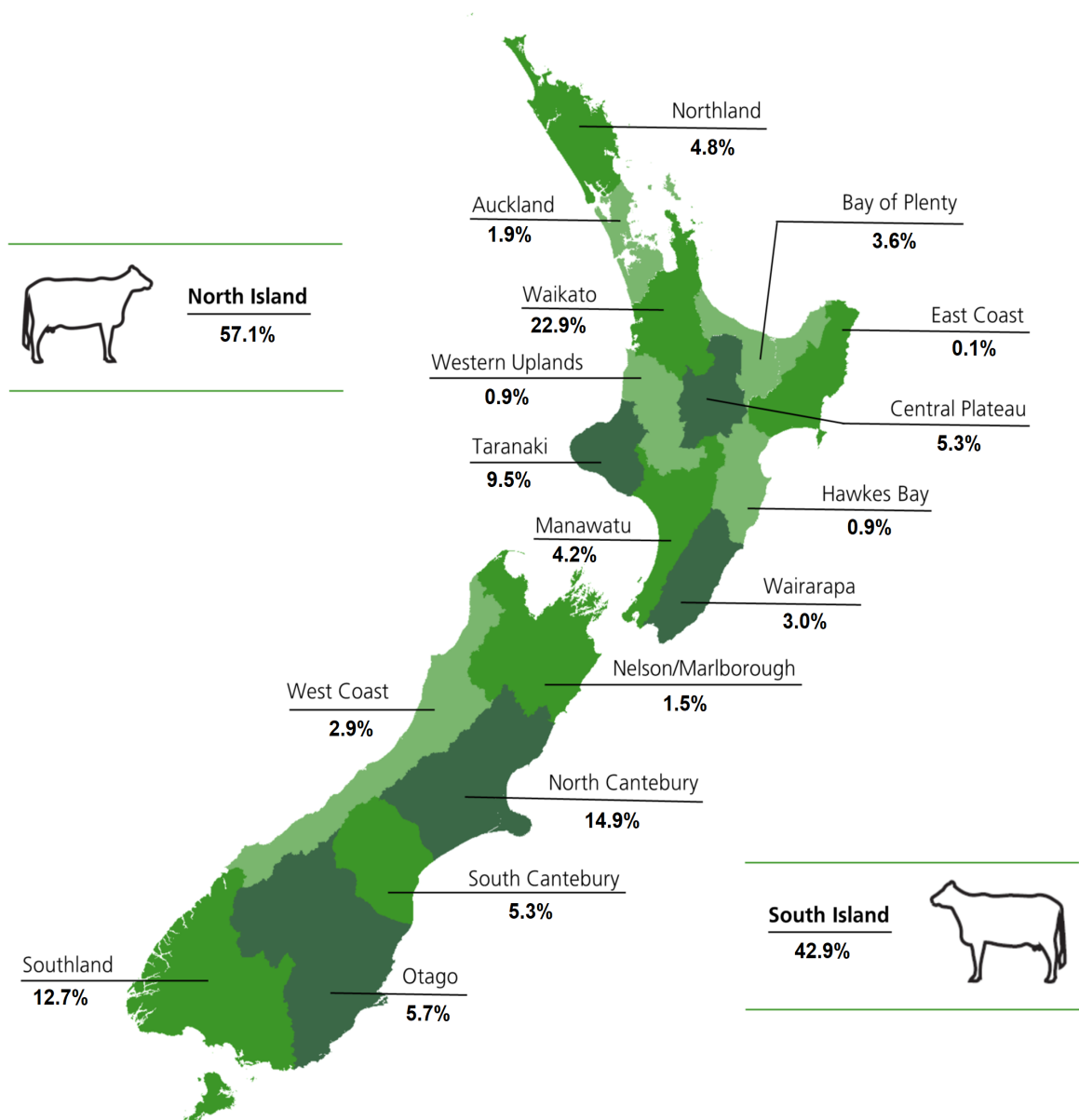
# 3. Regional dairy statistics

## 3.1. Regions

- 70% of dairy herds are located in the North Island.
- 43% of dairy cows are located in the South Island.

Cow distribution varies significantly across regions (Graph 3.1). Although the North Island contains approximately 70.1% of all dairy herds (Table 3.1), it holds only about 57% of the national cow population. In contrast, the South Island, with only 29.9% of herds (Table 3.1), accounts for around 43% of the cow population, as herd sizes there tend to be larger than those in the North Island. The Waikato region has the largest share of the national cow population (about 22.9%), followed by North Canterbury (14.9%), Southland (12.7%), and Taranaki (9.5%).

Graph 3.1: Regional distribution of dairy cows in 2023/24



- North Canterbury has the largest average herd size, at 800 cows.

Regional differences in farm area, herd size, and stocking rates reflect regional variations in land use, farm structure and climate (Table 3.1). Consistent with previous years, in 2023/24, North Island herds were on average smaller (138 ha and 365 cows) than South Island herds (221 ha and 644 cows). Herds in the North Island also had lower stocking rates (2.65 cows/ha on average) than herds in the South Island (2.92 cows/ha).

South Canterbury and Hawkes Bay had the largest average effective land areas per herd, each 251 hectares, while Taranaki had the smallest average effective land area with 114 hectares. When it comes to herd sizes, North Canterbury, South Canterbury, and Hawkes Bay lead with averages of 800, 797, and 675 cows per herd, respectively. In contrast, the smallest herds are found in Auckland and Taranaki, with averages of 292 and 308 cows per herd. Stocking rates are also highest in North Canterbury and South Canterbury, with averages of 3.39 and 3.18 cows per hectare, respectively. At the other end, Northland and the West Coast have the lowest stocking rates, at 2.15 and 2.21 cows per hectare.

Table 3.1: Herd analysis by region in 2023/24

Region	Total herds	Percentage of herds	Total cows	Percentage of cows	Total effective hectares	Percentage of effective hectares	Average herd size	Average effective hectares	Average cows per hectare
Northland	689	6.6	227,059	4.8	105,745	6.2	330	153	2.15
Auckland	302	2.9	88,206	1.9	38,084	2.2	292	126	2.32
Waikato	3,022	28.8	1,075,811	22.9	374,364	22.0	356	124	2.87
Bay of Plenty	461	4.4	167,732	3.6	60,477	3.6	364	131	2.77
Central Plateau	434	4.1	248,909	5.3	95,580	5.6	574	220	2.60
Western Uplands	81	0.8	43,526	0.9	17,222	1.0	537	213	2.53
East Coast	7	0.1	3,790	0.1	1,457	0.1	541	208	2.60
Hawkes Bay	64	0.6	43,205	0.9	16,080	0.9	675	251	2.69
Taranaki	1,455	13.9	448,448	9.5	165,637	9.7	308	114	2.71
Manawatu	474	4.5	197,236	4.2	81,369	4.8	416	172	2.42
Wairarapa	362	3.5	139,650	3.0	55,651	3.3	386	154	2.51
<b>North Island</b>	<b>7,351</b>	<b>70.1</b>	<b>2,683,571</b>	<b>57.1</b>	<b>1,011,664</b>	<b>59.4</b>	<b>365</b>	<b>138</b>	<b>2.65</b>
Nelson / Marlborough	181	1.7	69,018	1.5	27,355	1.6	381	151	2.52
West Coast	345	3.3	136,815	2.9	62,038	3.6	397	180	2.21
North Canterbury	875	8.3	700,320	14.9	206,397	12.1	800	236	3.39
South Canterbury	312	3.0	248,518	5.3	78,268	4.6	797	251	3.18
Otago	434	4.1	268,365	5.7	97,693	5.7	618	225	2.75
Southland	987	9.4	594,988	12.7	219,989	12.9	603	223	2.70
<b>South Island</b>	<b>3,134</b>	<b>29.9</b>	<b>2,018,024</b>	<b>42.9</b>	<b>691,740</b>	<b>40.6</b>	<b>644</b>	<b>221</b>	<b>2.92</b>
<b>New Zealand</b>	<b>10,485</b>	<b>100</b>	<b>4,701,596</b>	<b>100.0</b>	<b>1,703,404</b>	<b>100.0</b>	<b>448</b>	<b>162</b>	<b>2.76</b>

- North Canterbury recorded the highest milksolids production per herd in New Zealand.

North Canterbury had the highest production per herd in the South Island and New Zealand (355,675 kg milksolids/herd), which was approximately 3% higher than in the previous season (Table 3.2). This high level of production was achieved through large herd sizes (800 cows on average, an increase from 792 last season) and high milksolids production per cow (444 kg). In the North Island, Hawkes Bay recorded the highest milksolids production per herd (242,673 kg milksolids), reflecting its large herd sizes (675 cows/herd on average).

In 2023/24, the average milksolids production per cow and per hectare were higher in the South Island than in the North Island. In the South Island, North Canterbury recorded the highest average milksolids per hectare (1,508 kg MS/ha) for the 17th season in a row. In the North Island, Waikato had the highest average milksolids production per hectare (1,100 kg MS/ha).

In the South Island, Southland had the highest milksolids per cow (463 kg MS/cow on average), and in the North Island, Manawatu had the highest average milksolids per cow (397 kg MS/cow).

Table 3.2: Herd production analysis by region in 2023/24

Region	Total kg milk solids	Percent milk solids	Average litres per herd	Average kg milkfat per herd	Average kg protein per herd	Average kg milk solids per herd	Average kg milkfat per effective hectare	Average kg protein per effective hectare	Average kg milk solids per effective hectare	Average kg milkfat per cow	Average kg protein per cow	Average kg milk solids per cow
Northland	69,777,620	3.7	1,118,344	57,220	44,054	101,274	373	287	660	174	134	307
Auckland	30,586,430	1.6	1,133,378	56,953	44,326	101,280	452	351	803	195	152	347
Waikato	411,769,631	21.9	1,499,350	76,835	59,423	136,257	620	480	1,100	216	167	383
Bay of Plenty	58,226,359	3.1	1,398,067	71,291	55,013	126,304	543	419	963	196	151	347
Central Plateau	95,281,308	5.1	2,436,420	123,639	95,903	219,542	561	435	997	216	167	383
Western Uplands	13,589,301	0.7	1,806,525	94,754	73,015	167,769	446	343	789	176	136	312
East Coast	1,270,592	0.1	1,961,917	102,693	78,820	181,513	493	379	872	190	146	335
Hawkes Bay	15,531,080	0.8	2,691,088	135,698	106,975	242,673	540	426	966	201	158	359
Taranaki	176,092,825	9.4	1,304,629	68,402	52,624	121,026	601	462	1,063	222	171	393
Manawatu	78,383,707	4.2	1,845,178	92,816	72,551	165,366	541	423	963	223	174	397
Wairarapa	51,382,924	2.7	1,544,826	80,033	61,908	141,942	521	403	923	207	160	368
<b>North Island</b>	<b>1,001,891,777</b>	<b>53.2</b>	<b>1,497,774</b>	<b>76,848</b>	<b>59,445</b>	<b>136,293</b>	<b>558</b>	<b>432</b>	<b>990</b>	<b>211</b>	<b>163</b>	<b>373</b>
Nelson / Marlborough	25,936,282	1.4	1,547,475	81,032	62,263	143,294	536	412	948	213	163	376
West Coast	49,052,742	2.6	1,508,152	80,181	62,001	142,182	446	345	791	202	156	359
North Canterbury	311,215,397	16.5	3,870,983	198,059	157,615	355,675	840	668	1,508	247	197	444
South Canterbury	106,538,600	5.7	3,706,519	190,194	151,276	341,470	758	603	1,361	239	190	429
Otago	112,334,387	6.0	2,805,724	144,437	114,398	258,835	642	508	1,150	234	185	419
Southland	275,355,670	14.6	3,007,980	155,532	123,450	278,982	698	554	1,252	258	205	463
<b>South Island</b>	<b>880,433,078</b>	<b>46.8</b>	<b>3,041,005</b>	<b>156,722</b>	<b>124,207</b>	<b>280,930</b>	<b>710</b>	<b>563</b>	<b>1,273</b>	<b>243</b>	<b>193</b>	<b>436</b>
<b>New Zealand</b>	<b>1,882,324,855</b>	<b>100.0</b>	<b>1,959,051</b>	<b>100,723</b>	<b>78,803</b>	<b>179,525</b>	<b>620</b>	<b>485</b>	<b>1,105</b>	<b>225</b>	<b>176</b>	<b>400</b>

### 3.2. Districts

South Taranaki remains the district with the highest number of herds, totalling 891 herds (8.5% of all herds), followed by Matamata-Piako with 843 herds (8.0%) and Southland with 732 herds (7%). Southland also has the highest number of cows, with 448,124 cows (9.5% of the national total), followed by Ashburton with 345,256 cows (7.3%) and Taranaki with 293,912 cows (6.3%). The Mackenzie and Waimate districts in South Canterbury have the largest average herd sizes, with 1,202 and 855 cows per herd, respectively (Table 3.3).

Table 3.3 shows the distribution of business types across districts and regions. Fifty-five percent of herds are run by owner-operators, 16% are run by contract milkers and the remaining 29% of herds are operated by sharemilkers of various types (Table 3.5).

Table 3.3: Herd analysis by district in 2023/24

Region	District	Total herds	Number of owner operators	Number of contract milkers	Number of share milkers	Total cows	Total effective hectares	Average herd size	Average effective hectares	Average cows per hectare
Northland	Far North	190	129	16	43	62,447	28,649	329	151	2.18
	Whangarei	241	135	32	70	80,429	36,058	334	150	2.23
	Kaipara	258	169	32	54	84,184	41,038	326	159	2.05
Auckland	Rodney / Auckland	106	58	15	33	32,511	14,627	307	138	2.22
	Manukau / Papakura	6	3	0	3	1,614	859	269	143	1.88
	Franklin	190	101	17	72	54,081	22,598	285	119	2.39
Waikato	Waikato	578	291	74	193	202,006	74,345	349	129	2.72
	Hamilton City	13	8	1	4	3,783	1,468	291	113	2.58

Region	District	Total herds	Number of owner operators	Number of contract milkers	Number of share milkers	Total cows	Total effective hectares	Average herd size	Average effective hectares	Average cows per hectare
	Waipa	492	244	86	145	185,961	63,020	378	128	2.95
	Otorohanga	330	164	46	108	125,345	44,060	380	134	2.84
	Thames-Coromandel	73	40	18	13	23,088	8,883	316	122	2.60
	Hauraki	334	162	75	85	106,507	38,632	319	116	2.76
	Matamata-Piako	843	351	141	321	275,779	90,440	327	107	3.05
	South Waikato	359	160	80	106	153,344	53,516	427	149	2.87
Bay of Plenty	Western Bay of Plenty	157	87	34	34	58,379	20,522	372	131	2.84
	Tauranga	7	3	1	3	4,138	1,437	591	205	2.88
	Kawerau / Whakatane	239	141	30	65	86,128	31,146	360	130	2.77
	Opotiki	58	31	5	21	19,087	7,372	329	127	2.59
Central Plateau	Taupo	152	99	23	30	119,444	47,076	786	310	2.54
	Rotorua	282	162	41	78	129,465	48,504	459	172	2.67
Western Uplands	Waitomo	55	28	7	20	30,824	12,137	560	221	2.54
	Ruapehu	26	15	2	9	12,702	5,085	489	196	2.50
East Coast	Gisborne / Wairoa	7	4	2	1	3,790	1,457	541	208	2.60
Hawkes Bay	Napier / Hastings	26	20	1	5	14,861	6,098	572	235	2.44
	Central Hawke's Bay	38	28	3	7	28,344	9,982	746	263	2.84
Taranaki	New Plymouth	357	199	51	107	99,738	39,647	279	111	2.52
	Stratford	207	134	18	55	54,798	21,028	265	102	2.61
	South Taranaki	891	486	131	274	293,912	104,962	330	118	2.80
Manawatu	Wanganui	18	11	3	4	6,891	3,129	383	174	2.20
	Rangitikei	77	48	18	11	37,780	15,773	491	205	2.40
	Manawatu	226	146	27	53	88,023	36,494	389	161	2.41
	Palmerston North City	33	23	4	6	15,558	5,877	471	178	2.65
	Horowhenua	107	76	11	20	44,742	18,223	418	170	2.46
	Kapiti Coast / Upper Hutt	13	7	1	5	4,242	1,873	326	144	2.26
Wairarapa	Tararua	239	140	35	64	82,363	34,215	345	143	2.41
	Masterton	14	5	4	5	7,652	2,914	547	208	2.63
	Carterton	45	34	9	2	18,115	6,917	403	154	2.62
	South Wairarapa	64	31	17	16	31,520	11,605	492	181	2.72
<b>North Island</b>	<b>North Island</b>	<b>7,351</b>	<b>3,973</b>	<b>1,111</b>	<b>2,145</b>	<b>2,683,571</b>	<b>1,011,664</b>	<b>365</b>	<b>138</b>	<b>2.65</b>
Nelson / Marlborough	Marlborough	42	30	4	8	14,597	5,570	348	133	2.62
	Kaikoura	19	11	0	8	9,268	3,144	488	165	2.95
	Tasman/Nelson City	120	86	13	21	45,153	18,640	376	155	2.42
West Coast	Buller	117	86	7	24	45,663	19,871	390	170	2.30
	Grey	81	55	11	15	37,037	16,504	457	204	2.24
	Westland	147	108	6	33	54,115	25,663	368	175	2.11
North Canterbury	Hurunui	96	51	24	21	81,442	26,424	848	275	3.08
	Waimakariri	99	56	14	29	68,941	21,213	696	214	3.25
	Christchurch City	33	18	10	5	26,084	8,179	790	248	3.19
	Banks Peninsula	6	3	0	3	2,164	914	361	152	2.37
	Selwyn	231	164	29	38	176,433	51,667	764	224	3.41
	Ashburton	410	224	66	119	345,256	98,001	842	239	3.52

Region	District	Total herds	Number of owner operators	Number of contract milkers	Number of share milkers	Total cows	Total effective hectares	Average herd size	Average effective hectares	Average cows per hectare
South Canterbury	Timaru	179	124	13	42	129,572	40,303	724	225	3.21
	Mackenzie	15	6	2	7	18,035	6,071	1,202	405	2.97
	Waimate	118	57	12	49	100,911	31,893	855	270	3.16
Otago	Waitaki	152	63	19	64	105,395	33,017	693	217	3.19
	Dunedin City	61	38	1	19	28,812	10,481	472	172	2.75
	Clutha	187	111	19	49	105,501	42,745	564	229	2.47
Southland	Central Otago / Lakes	34	23	6	4	28,656	11,451	843	337	2.50
	Gore	161	91	24	40	91,592	35,412	569	220	2.59
	Invercargill	94	44	17	29	55,273	20,489	588	218	2.70
	Southland	732	368	110	224	448,124	164,088	612	224	2.73
<b>South Island</b>	<b>South Island</b>	<b>3,134</b>	<b>1,817</b>	<b>407</b>	<b>851</b>	<b>2,018,024</b>	<b>691,740</b>	<b>644</b>	<b>221</b>	<b>2.92</b>
<b>New Zealand</b>	<b>New Zealand</b>	<b>10,485</b>	<b>5,790</b>	<b>1,518</b>	<b>2,996</b>	<b>4,701,596</b>	<b>1,703,404</b>	<b>448</b>	<b>162</b>	<b>2.76</b>

Production per cow and per hectare varied widely across districts, reflecting differences in farm management practices and local conditions. Nationally, Mackenzie district had the highest average production per herd with 404,662 kg of milksolids followed by Ashburton with 385,684 kg of milksolids (Table 3.4). Ashburton had the highest average milk solids per effective hectare, producing 1,614 kg, followed by Christchurch district with 1,441 kg per hectare. Southland recorded the highest average milk solids production per cow at 468 kg, with Invercargill close behind at 465 kg. In the North Island, Taupo achieved the highest milk solids production per herd, averaging 303,073 kg, followed by Central Hawke's Bay with 279,638 kg. Among North Island districts, Matamata-Piako and South Waikato had the highest average milk solids per hectare, producing 1,180 kg and 1,173 kg, respectively. Palmerston North, Masterton, Manawatu, Horowhenua, and South Waikato districts led in milk solids per cow, each averaging 400 kg or more per cow.

Table 3.4: Herd production analysis by district in 2023/24

Region	District	Average litres per herd	Average kg milkfat per herd	Average kg protein per herd	Average kg milk solids per herd	Average kg milkfat per effective hectare	Average kg protein per effective hectare	Average kg milk solids per effective hectare	Average kg milkfat per cow	Average kg protein per cow	Average kg milk solids per cow
Northland	Far North	1,152,095	58,602	45,242	103,844	389	300	689	178	138	316
	Whangarei	1,168,271	59,974	46,002	105,976	401	307	708	180	138	318
	Kaipara	1,046,852	53,628	41,360	94,988	337	260	597	164	127	291
Auckland	Rodney / Auckland	1,048,464	54,356	41,493	95,849	394	301	695	177	135	313
	Manukau / Papakura	1,038,267	51,998	40,274	92,271	363	281	645	193	150	343
	Franklin	1,183,755	58,559	46,035	104,594	492	387	879	206	162	367
Waikato	Waikato	1,450,713	73,672	57,103	130,775	573	444	1,017	211	163	374
	Hamilton City	1,252,784	63,484	49,192	112,676	562	436	998	218	169	387
	Waipa	1,651,450	84,317	65,451	149,768	658	511	1,169	223	173	396
	Otorohanga	1,569,264	81,010	62,461	143,471	607	468	1,075	213	164	378
	Thames-Coromandel	1,059,542	55,083	42,194	97,277	453	347	799	174	133	308
Bay of Plenty	Hauraki	1,215,256	62,630	48,406	111,036	541	418	960	196	152	348
	Matamata-Piako	1,390,473	71,472	55,142	126,614	666	514	1,180	218	169	387
	South Waikato	1,923,274	98,549	76,278	174,827	661	512	1,173	231	179	409
	Western Bay of Plenty	1,368,254	70,700	54,392	125,092	541	416	957	190	146	336
	Tauranga	1,899,827	100,519	77,010	177,530	490	375	865	170	130	300
Central Plateau	Kawerau / Whakatane	1,467,510	74,316	57,398	131,714	570	440	1,011	206	159	365
	Opotiki	1,132,060	56,899	44,214	101,113	448	348	796	173	134	307
	Taupo	3,353,859	170,576	132,497	303,073	551	428	979	217	169	386

Region	District	Average litres per herd	Average kg milkfat per herd	Average kg protein per herd	Average kg milk solids per herd	Average kg milkfat per effective hectare	Average kg protein per effective hectare	Average kg milk solids per effective hectare	Average kg milkfat per cow	Average kg protein per cow	Average kg milk solids per cow
	Rotorua	1,941,914	98,340	76,178	174,518	572	443	1,015	214	166	380
Western Uplands	Waitomo	1,824,144	96,085	73,995	170,080	435	335	771	171	132	303
	Ruapehu	1,769,255	91,939	70,941	162,880	470	363	833	188	145	333
East Coast	Gisborne / Wairoa	1,961,917	102,693	78,820	181,513	493	379	872	190	146	335
Hawkes Bay	Napier / Hastings	2,087,711	106,404	82,243	188,648	454	351	804	186	144	330
	Central Hawke's Bay	3,103,925	155,740	123,897	279,638	593	472	1,065	209	166	375
Taranaki	New Plymouth	1,144,957	60,590	46,072	106,663	546	415	960	217	165	382
	Stratford	1,092,598	56,621	43,652	100,273	557	430	987	214	165	379
	South Taranaki	1,417,865	74,268	57,334	131,602	630	487	1,117	225	174	399
Manawatu	Wanganui	1,477,221	72,502	57,459	129,961	417	331	748	189	150	339
	Rangitikei	2,068,211	104,586	81,844	186,430	511	400	910	213	167	380
	Manawatu	1,754,802	88,860	69,116	157,976	550	428	978	228	177	406
	Palmerston North City	2,146,327	110,138	85,099	195,237	618	478	1,096	234	181	414
	Horowhenua	1,891,379	93,432	73,694	167,126	549	433	981	223	176	400
	Kapiti Coast/Upper Hutt	1,460,041	70,958	56,844	127,802	492	395	887	217	174	392
Wairarapa	Tararua	1,364,358	70,973	54,593	125,566	496	381	877	206	158	364
	Masterton	2,516,119	125,544	99,097	224,642	603	476	1,079	230	181	411
	Carterton	1,644,011	83,217	64,958	148,174	541	423	964	207	161	368
	South Wairarapa	1,936,550	101,674	78,947	180,622	561	435	996	206	160	367
<b>North Island</b>	<b>North Island</b>	<b>1,497,774</b>	<b>76,848</b>	<b>59,445</b>	<b>136,293</b>	<b>558</b>	<b>432</b>	<b>990</b>	<b>211</b>	<b>163</b>	<b>373</b>
Nelson / Marlborough	Marlborough	1,511,441	78,025	59,493	137,518	588	449	1,037	225	171	396
	Kaikoura	2,040,793	106,518	82,581	189,099	644	499	1,143	218	169	388
	Tasman/Nelson City	1,481,978	78,049	60,015	138,064	502	386	889	207	159	367
West Coast	Buller	1,500,101	79,120	61,197	140,317	466	360	826	203	157	360
	Grey	1,814,493	95,493	74,344	169,837	469	365	834	209	163	371
	Westland	1,345,759	72,588	55,840	128,428	416	320	736	197	152	349
North Canterbury	Hurunui	4,068,887	210,964	165,261	376,225	766	600	1,367	249	195	443
	Waimakariri	3,433,077	171,065	137,300	308,365	798	641	1,439	246	197	443
	Christchurch City	3,858,893	198,142	159,019	357,161	799	642	1,441	251	201	452
	Banks Peninsula	1,520,894	82,089	62,405	144,493	539	410	949	228	173	401
	Selwyn	3,468,483	177,961	141,458	319,419	796	632	1,428	233	185	418
	Ashburton	4,192,523	214,570	171,114	385,684	898	716	1,614	255	203	458
South Canterbury	Timaru	3,466,046	176,837	140,830	317,667	785	625	1,411	244	195	439
	Mackenzie	4,469,120	223,275	181,386	404,662	552	448	1,000	186	151	337
	Waimate	3,974,362	206,250	163,295	369,544	763	604	1,367	241	191	432
Otago	Waitaki	3,246,663	168,837	133,494	302,330	777	615	1,392	243	193	436
	Dunedin City	2,212,528	112,877	89,276	202,154	657	520	1,177	239	189	428
	Clutha	2,479,879	125,904	100,079	225,982	551	438	989	223	177	401
	Central Otago / Lakes	3,690,884	193,906	152,861	346,767	576	454	1,030	230	181	411
Southland	Gore	2,679,771	138,321	109,360	247,682	629	497	1,126	243	192	435
	Invercargill	2,955,784	152,350	120,801	273,151	699	554	1,253	259	205	465
	Southland	3,086,871	159,726	126,889	286,616	713	566	1,279	261	207	468

Region	District	Average litres per herd	Average kg milkfat per herd	Average kg protein per herd	Average kg milk solids per herd	Average kg milkfat per effective hectare	Average kg protein per effective hectare	Average kg milk solids per effective hectare	Average kg milkfat per cow	Average kg protein per cow	Average kg milk solids per cow
South Island	South Island	3,041,005	156,722	124,207	280,930	710	563	1,273	243	193	436
New Zealand	New Zealand	1,959,051	100,723	78,803	179,525	620	485	1,105	225	176	400

Note: Districts with fewer than four herds have been added to a neighbouring district to preserve anonymity.

### 3.3. Operating structures

The main operating structures found on New Zealand dairy farms are owner operator, sharemilker and contract milker.

Owner operators are farmers who own and operate their own farms, or who employ a manager to operate the farm for a fixed wage.

Owner-operators receive all the farm income, although they may pay wages. Owner operators comprise the largest group of all operating structures, being 55% of all herds (Table 3.5).

Contract milkers (15% of herds) are contracted to milk a herd at a set price per kilogram of milksolids produced. The rate is set in part according to the amount of farm work done.

Sharemilking has traditionally been the first step to farm ownership and is the second largest operating structure, accounting for 29% of herds across all types of sharemilkers. Sharemilking involves operating a farm on behalf of the farm owner for an agreed share of the farm receipts (as opposed to a set wage). Two types of sharemilking agreement are commonly used: Variable order sharemilking and herd-owning sharemilking agreements.

Herd-owning sharemilkers (also called 50/50 sharemilkers) own the herd and generally any equipment (other than the milking plant) needed to farm the property. The sharemilker is usually responsible for milk-harvesting expenses, labour, stock-related expenses, and general farm work. The owner is usually responsible for expenses related to maintaining the property. The percentage quoted in a 50/50 sharemilking agreement usually refers to the proportion of milk income the sharemilker receives. While this percentage is most commonly 50%, it can range from 45% to 55%. Under the 50/50 agreement the sharemilker receives the agreed percentage of milk income plus the majority of income from stock sales, and the farm owner receives the remaining percentage of milk income.

Unlike the 50/50 agreement, where the owner may have little to do with farm management, a variable-order sharemilking agreement often sees the owner retain some involvement in management of the farm. The variable-order sharemilking agreement involves the farm owner retaining ownership of the herd and bearing more of the farm costs, such as animal health and breeding. The amount of farm work required by the sharemilker is determined by the individual agreement, with responsibility ranging from herd management only to carrying out all farm work.

The "Other/Unknown" category includes herds with unknown operating structure or herds with characteristics that do not match the description of their operating structure.

- 55% of all herds are operated as owner-operators.
- 59% of all sharemilkers are 50/50 sharemilkers.

The number of herds, average herd size, effective area and number of cows per hectare for each of the main operating structures are shown in Table 3.5. In 2023/24, 55% (5,790) of New Zealand dairy herds operated under an owner-operators structure, 29% (2,996) operated under a sharemilking agreement and 14.5% operated under a contract milkers agreement. Fifty-nine percent (1,771) of all sharemilkers have 50/50 agreements.

Table 3.5: Herd analysis by operating structure in 2023/24

Operating structure	Number of herds	Percentage of herds	Average herd size	Average effective hectares	Average cows per effective hectare
Owner-operators	5,790	55.2	441	163	2.71
Contract milkers	1,518	14.5	481	169	2.85
Sharemilkers:					
less than 20%	124	1.2	751	244	3.08
20-29%	513	4.9	521	183	2.84

Operating structure	Number of herds	Percentage of herds	Average herd size	Average effective hectares	Average cows per effective hectare
30-49%	126	1.2	391	137	2.84
50/50	1,771	16.9	415	148	2.80
over 50%	462	4.4	426	158	2.69
All sharemilkers	2,996	28.6	447	159	2.81
Unknown	181	1.7	441	161	2.75
<b>All farms</b>	<b>10,485</b>	<b>100.0</b>	<b>448</b>	<b>162</b>	<b>2.76</b>

Herd production in each of the main operating structure groups is shown in Table 3.6. On average, sharemilkers on agreements of less than 20% have the highest milksolids production per herd, per hectare and per cow.

Table 3.6: Herd production analysis by operating structure in 2023/24

Operating structure	Average litres per herd	Average kg milkfat per herd	Average kg milksolids per herd	Average kg milkfat per effective hectare	Average kg milksolids per effective hectare	Average kg milkfat per cow	Average kg milksolids per cow
Owner-operators	1,899,579	97,369	173,687	599	1,068	221	394
Contract milkers	2,172,242	112,207	199,825	666	1,185	233	415
Sharemilkers:							
less than 20%	3,580,956	183,452	329,733	753	1,354	244	439
20-29%	2,302,151	118,655	212,238	648	1,160	228	408
30-49%	1,604,580	83,838	148,668	610	1,082	215	381
50/50	1,800,949	93,373	166,040	631	1,122	225	401
over 50%	1,843,456	95,094	169,537	602	1,073	223	398
All sharemilkers	1,958,737	101,295	180,534	637	1,135	226	404
Unknown	2,078,703	102,230	179,351	636	1,116	232	406
<b>All farms</b>	<b>1,959,051</b>	<b>100,723</b>	<b>179,525</b>	<b>620</b>	<b>1,105</b>	<b>225</b>	<b>400</b>

Table 3.7 shows the percentage of herds in each operating structure type, whereas Table 3.8 gives the actual number of herds. For the last five seasons, the percentage of herds with contract milkers is shown separately. Prior to this they were included in the Owner-operator category. Over the past five seasons, the percentage of owner-operators has remained relatively stable, hovering around 56% but showing a slight decline to 55.2% in 2023/24. Sharemilker operations have also been steady, fluctuating slightly and ending at 28.6% in 2023/24, close to where they started in 2019/20. This indicates a fairly consistent distribution in operating structures between owner-operators and sharemilkers over recent years. Table 3.8 indicates the number of owner operators decreased by 169 herds from 2022/23 to 2023/24, while sharemilking herds across all agreements decreased by 7 herds. Conversely, the number of contract milkers increased by 89 herds.

Table 3.7: Trend in the percentage of herds in each operating structure for the last 10 seasons

Operating structure	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Owner-operators	67.3	69.8	72.4	59.9	57.2	56.1	56.2	56	56.2	55.2
Contract Milkers				12.4	12.8	14.3	14.4	14.5	13.5	14.5
Sharemilkers:										
less than 20%	1.5	1.3	1.1	1.1	1.2	1.3	1.1	1.1	1.1	1.2
20-29%	8.8	6.9	5.0	5.1	5.2	5.5	4.8	4.5	4.6	4.9
30-49%	1.4	1.5	1.3	1.4	1.4	1.4	1.3	1.4	1.3	1.2
50/50	17.1	16.8	16.4	15.9	16.9	16.6	16.6	16.8	16.8	16.9
over 50%	3.6	3.5	3.5	3.7	4.6	4.0	4.7	4.8	5.5	4.4
All sharemilkers	32.4	30.0	27.3	27.3	29.3	28.9	28.5	28.6	29.3	28.6
Other/Unknown	0.3	0.3	0.3	0.4	0.7	0.8	0.8	0.9	1.1	1.7

Table 3.8: Trend in the number of herds in each operating structure for the last 10 seasons



Operating structure	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Owner-operators	8,059	8,315	8,503	6,940	6,507	6,268	6,206	6,046	5,959	5,790
Contract Milkers				1,440	1,460	1,597	1,594	1,568	1,429	1,518
Sharemilkers:										
less than 20%	179	153	134	122	138	148	117	115	117	124
20-29%	1,050	821	586	595	589	616	534	489	485	513
30-49%	171	174	157	161	159	159	148	149	140	126
50/50	2,050	2,001	1,925	1,848	1,919	1,857	1,831	1,817	1,778	1,771
over 50%	429	421	406	433	526	447	515	517	580	462
All sharemilkers	3,879	3,570	3,208	3,159	3,331	3,227	3,145	3,089	3,100	2,996
Other/Unknown	32	33	37	51	74	87	89	93	113	181
<b>Total</b>	<b>11,970</b>	<b>11,918</b>	<b>11,748</b>	<b>11,590</b>	<b>11,372</b>	<b>11,179</b>	<b>11,034</b>	<b>10,796</b>	<b>10,601</b>	<b>10,485</b>

Table 3.9 compares the number (and percentage) of owner-operators, contract milkers and sharemilkers by region in 2023/24. In the South Island there were more variable order sharemilkers than 50/50 sharemilkers, while the opposite was the case in the North Island. Waikato has the largest proportion, with 24.5% of all owner operators in the country, followed by Taranaki, North Canterbury and Southland with 14.1%, 8.9% and 8.7%, respectively. Seventy eight percent of all 50/50 sharemilkers are in the North Island and 22 percent are in the South Island.

Table 3.9: Operating structure by region in 2023/24

Region	Owner operators	Owner operators %	Contract milkers	Contract milkers %	All share milkers	All share milkers %	50/50 share milkers	50/50 share milkers %	Variable order share milkers	Variable order share milkers %	Total herds (excl. unknown)	Total herds (excl. unknown) %
Northland	433	7.5	80	5.3	167	5.6	111	6.3	56	4.6	680	6.6
Auckland	162	2.8	32	2.1	108	3.6	69	3.9	39	3.2	302	2.9
Waikato	1,420	24.5	521	34.3	975	32.5	687	38.8	288	23.5	2,916	28.3
Bay of Plenty	262	4.5	70	4.6	123	4.1	76	4.3	47	3.8	455	4.4
Central Plateau	261	4.5	64	4.2	108	3.6	75	4.2	33	2.7	433	4.2
Western Uplands	43	0.7	9	0.6	29	1.0	13	0.7	16	1.3	81	0.8
East Coast	4	0.1	2	0.1	1	0.0	0	0.0	1	0.1	7	0.1
Hawkes Bay	48	0.8	4	0.3	12	0.4	9	0.5	3	0.2	64	0.6
Taranaki	819	14.1	200	13.2	436	14.6	245	13.8	191	15.6	1,455	14.1
Manawatu	311	5.4	64	4.2	99	3.3	52	2.9	47	3.8	474	4.6
Wairarapa	210	3.6	65	4.3	87	2.9	50	2.8	37	3.0	362	3.5
<b>North Island</b>	<b>3,973</b>	<b>68.6</b>	<b>1,111</b>	<b>73.2</b>	<b>2,145</b>	<b>71.6</b>	<b>1,387</b>	<b>78.3</b>	<b>758</b>	<b>61.9</b>	<b>7,229</b>	<b>70.2</b>
Nelson / Marlborough	127	2.2	17	1.1	37	1.2	24	1.4	13	1.1	181	1.8
West Coast	249	4.3	24	1.6	72	2.4	30	1.7	42	3.4	345	3.3
North Canterbury	516	8.9	143	9.4	215	7.2	101	5.7	114	9.3	874	8.5
South Canterbury	187	3.2	27	1.8	98	3.3	29	1.6	69	5.6	312	3.0
Otago	235	4.1	45	3.0	136	4.5	51	2.9	85	6.9	416	4.0
Southland	503	8.7	151	9.9	293	9.8	149	8.4	144	11.8	947	9.2
<b>South Island</b>	<b>1,817</b>	<b>31.4</b>	<b>407</b>	<b>26.8</b>	<b>851</b>	<b>28.4</b>	<b>384</b>	<b>21.7</b>	<b>467</b>	<b>38.1</b>	<b>3,075</b>	<b>29.8</b>
<b>New Zealand</b>	<b>5,790</b>	<b>100.0</b>	<b>1,518</b>	<b>100.0</b>	<b>2,996</b>	<b>100</b>	<b>1,771</b>	<b>100.0</b>	<b>1,225</b>	<b>100.0</b>	<b>10,304</b>	<b>100.0</b>

Table 3.10 shows the number and percentage of owner-operators, contract milkers, and sharemilkers by herd size. For most operating structures, herds in the 200-249 size range (which make up 11.9% of herds nationally) represent the largest percentage within their respective categories. Owner-operators are relatively evenly distributed across herd sizes, peaking at 12.2% in the 200-249 herd size range, and 44% of their herds consisting of 400 or more cows. In contrast, contract milkers have a higher concentration in the 250-299 range (11.7%) and tend to manage larger herds compared to owner-operators, especially in the 400+ herd size categories (52%).

Table 3.10: Operating structure by herd size in 2023/24

Herd size	Owner operators	Owner operators %	Contract milkers	Contract milkers %	All share milkers	All share milkers %	50/50 share milkers	50/50 share milkers %	Variable order share milkers	Variable order share milkers %	Total herds (excl. unknown)	Total herds (excl. unknown) %
10-49	6	0.1	2	0.1	1	0.0	0	0.0	1	0.1	9	0.1
50-99	143	2.5	3	0.2	17	0.6	6	0.3	11	0.9	163	1.6
100-149	331	5.7	11	0.7	93	3.1	46	2.6	47	3.8	435	4.2
150-199	567	9.8	72	4.7	249	8.3	159	9.0	90	7.3	888	8.6
200-249	707	12.2	170	11.2	370	12.3	246	13.9	124	10.1	1,247	12.1
250-299	551	9.5	177	11.7	337	11.2	230	13.0	107	8.7	1,065	10.3
300-349	530	9.2	160	10.5	301	10.0	197	11.1	104	8.5	991	9.6
350-399	407	7.0	125	8.2	239	8.0	155	8.8	84	6.9	771	7.5
400-449	403	7.0	131	8.6	209	7.0	128	7.2	81	6.6	743	7.2
450-499	322	5.6	79	5.2	195	6.5	105	5.9	90	7.3	596	5.8
500-549	243	4.2	99	6.5	168	5.6	93	5.3	75	6.1	510	4.9
550-599	231	4.0	80	5.3	135	4.5	88	5.0	47	3.8	446	4.3
600-649	216	3.7	74	4.9	144	4.8	77	4.3	67	5.5	434	4.2
650-699	154	2.7	65	4.3	79	2.6	36	2.0	43	3.5	298	2.9
700-749	139	2.4	43	2.8	72	2.4	35	2.0	37	3.0	254	2.5
750-799	119	2.1	39	2.6	53	1.8	28	1.6	25	2.0	211	2.0
800-849	130	2.2	31	2.0	75	2.5	31	1.8	44	3.6	236	2.3
850-899	93	1.6	26	1.7	39	1.3	23	1.3	16	1.3	158	1.5
900-949	68	1.2	25	1.6	54	1.8	21	1.2	33	2.7	147	1.4
950-999	70	1.2	23	1.5	32	1.1	16	0.9	16	1.3	125	1.2
1000-1099	115	2.0	29	1.9	49	1.6	22	1.2	27	2.2	193	1.9
1100-1199	78	1.3	20	1.3	27	0.9	14	0.8	13	1.1	125	1.2
1200-1499	113	2.0	28	1.8	37	1.2	9	0.5	28	2.3	178	1.7
1500+	54	0.9	6	0.4	21	0.7	6	0.3	15	1.2	81	0.8
<b>Total/Avg</b>	<b>5,790</b>	<b>100.0</b>	<b>1,518</b>	<b>100.0</b>	<b>2,996</b>	<b>100.0</b>	<b>1,771</b>	<b>100.0</b>	<b>1,225</b>	<b>100.0</b>	<b>10,304</b>	<b>100.0</b>

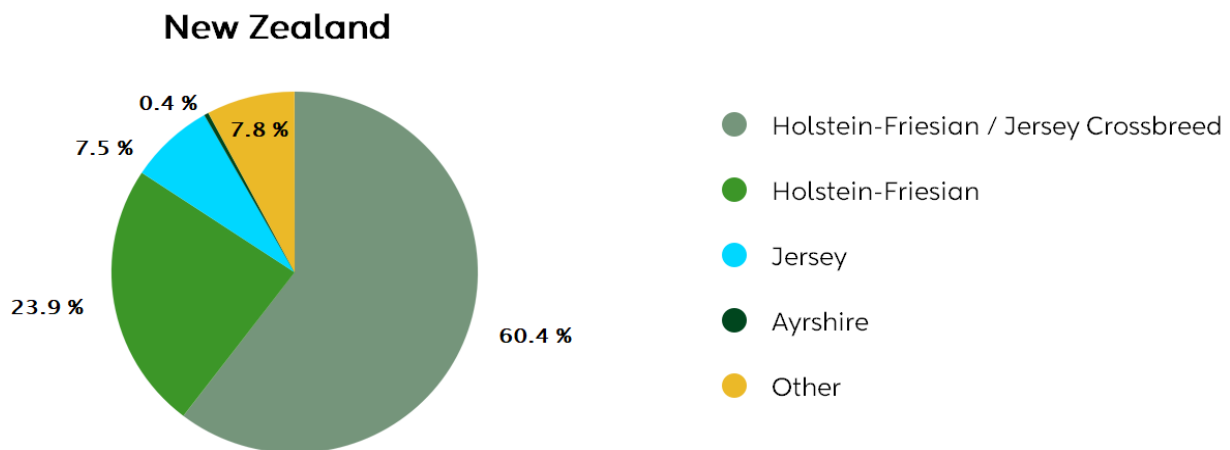
### 3.4. Breed breakdown

Three breeds of dairy cattle dominate the dairy cow inseminations carried out in New Zealand: Holstein-Friesian, Jersey, and Holstein-Friesian/Jersey Crossbreed. Historically, these insemination counts have been pulled from the LIC National Database. From the 2021/22 season onwards, counts are based on records in the Dairy Industry Good Animal Database (DIGAD, <https://www.dairynz.co.nz/animal/animal-evaluation/animal-database/>). Breed categorisation has also changed to now match the Animal Evaluation (AE) breed classification used by New Zealand Animal Evaluation Limited (NZAEL).

The Jersey breed dominated the national dairy herd until the late 1960s. By 1970, Holstein-Friesian was the dominant dairy breed in New Zealand, because of changes in farm management practices. Holstein-Friesian/Jersey Crossbreed now makes up the largest proportion of the national dairy herd.

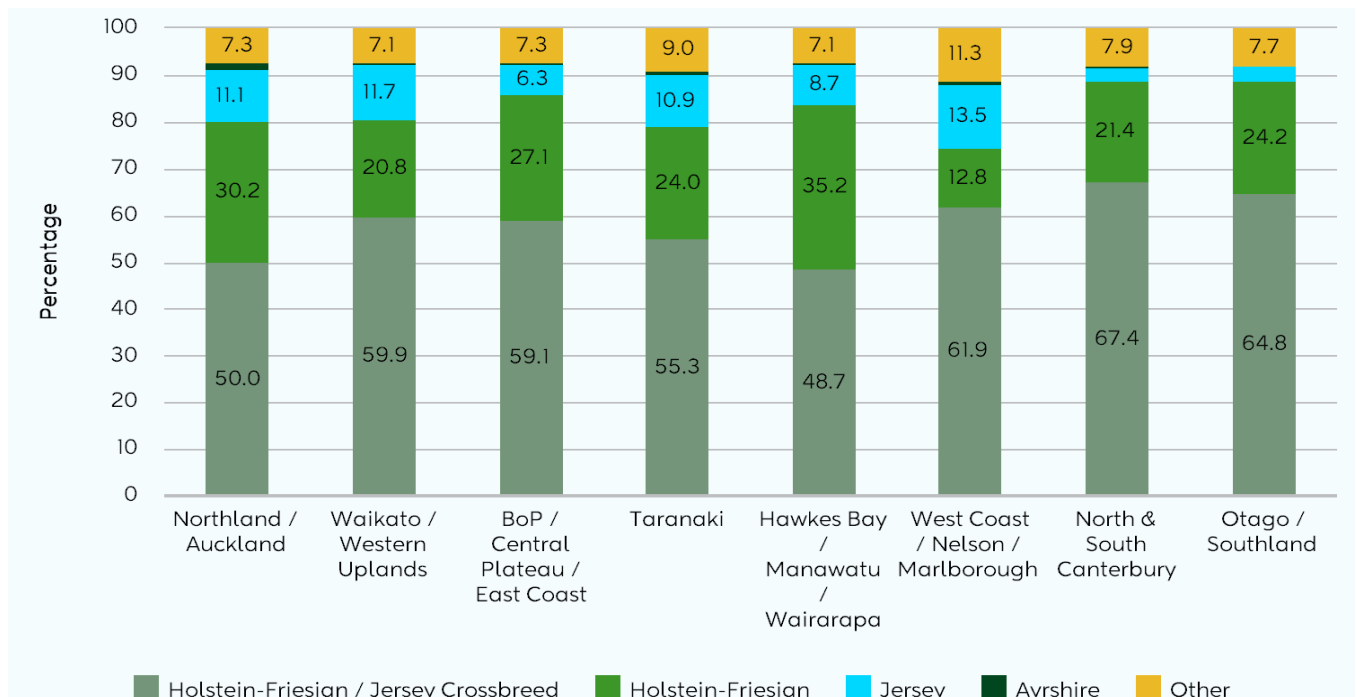
Graphs 3.2 and 3.3 display the percentages of the main dairy breed categories for New Zealand and each region. Percentages are given for Holstein-Friesian, Jersey, Holstein-Friesian/Jersey Crossbreed and Ayrshire cows, with the remaining breeds and crossbreeds grouped into the "Other" category. Holstein-Friesian/Jersey Crossbreed is the most common breed category in New Zealand, accounting for 60.4% of the national herd and ranging between 48.7% and 67.4% across all regions.

Graph 3.2: Breed category percentages of cows for New Zealand in 2023/24



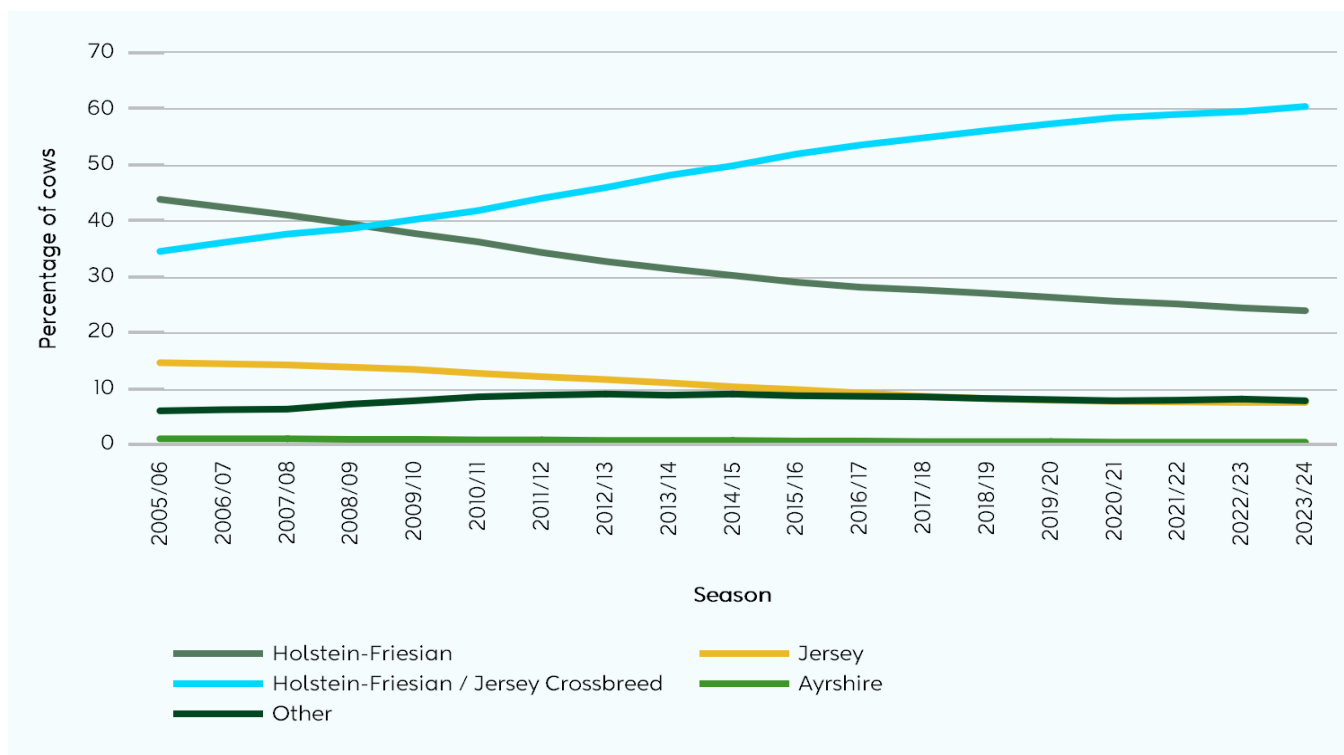
Holstein-Friesian/Jersey Crossbreed cows make up more than 60% of the herd in the South Island, reaching their highest concentration in North & South Canterbury (67.4%). Holstein-Friesians are more prevalent in northern regions, such as Hawke's Bay/Manawatu/Wairarapa (35.2%) and Northland/Auckland (30.2%). Although Jerseys are less common overall, they have a stronger presence in West Coast/Nelson/Marlborough (13.5%), Waikato/Western Uplands (11.7%), and Northland/Auckland (11.1%).

Graph 3.3: Breed category percentages of cows by region in 2023/24



Over the years, the percentage of Holstein-Friesian and Jersey cows has consistently decreased (Graph 3.4). In contrast, the proportion of Holstein-Friesian/Jersey Crossbreed cows has steadily increased, rising from 34.5% in 2005/06 to 60.4% in 2023/24, indicating a growing preference for crossbreeding over purebred Holstein-Friesian or Jersey cows.

Graph 3.4: Change in breed category percentages across time



# 4. Herd improvement

## 4.1. Use of herd testing

Herd testing involves the collection of individual milk samples from animals in the herd. A full herd test provides information on milk volumes, milkfat and protein yields, and somatic cell counts (SCC).

Herd testing provides an overall picture of the production by each cow in a herd and enables the monitoring of SCC which gives an indication of udder health. More specifically, herd test information identifies low-producing cows (for removal from the herd or drying off), high producers (for breeding), and cows with high SCC (for treatment or removal from the herd).

There are two main herd testing service providers LIC and CRV. Farmers choose the frequency of herd testing depending on their objectives related to selective breeding, animal health and so on. Data used in the following analysis includes figures from both herd test providers.

- 77% of cows were herd-tested in 2023/24.

Both the percentage of total herds, and the percentage of total cows using herd testing at least once during the season, decreased in 2023/24 (Table 4.1). The percentage of herds testing (74%) in 2023/24, was approximately 21% higher than in 2015/16 (season with the lowest percentage of herds herd-tested on record). A total of 3.623 million cows were herd-tested in 2023/24, this equates to 77% of total cows being herd-tested. The number of cows herd-tested in 2023/24 was below the 5-year average.

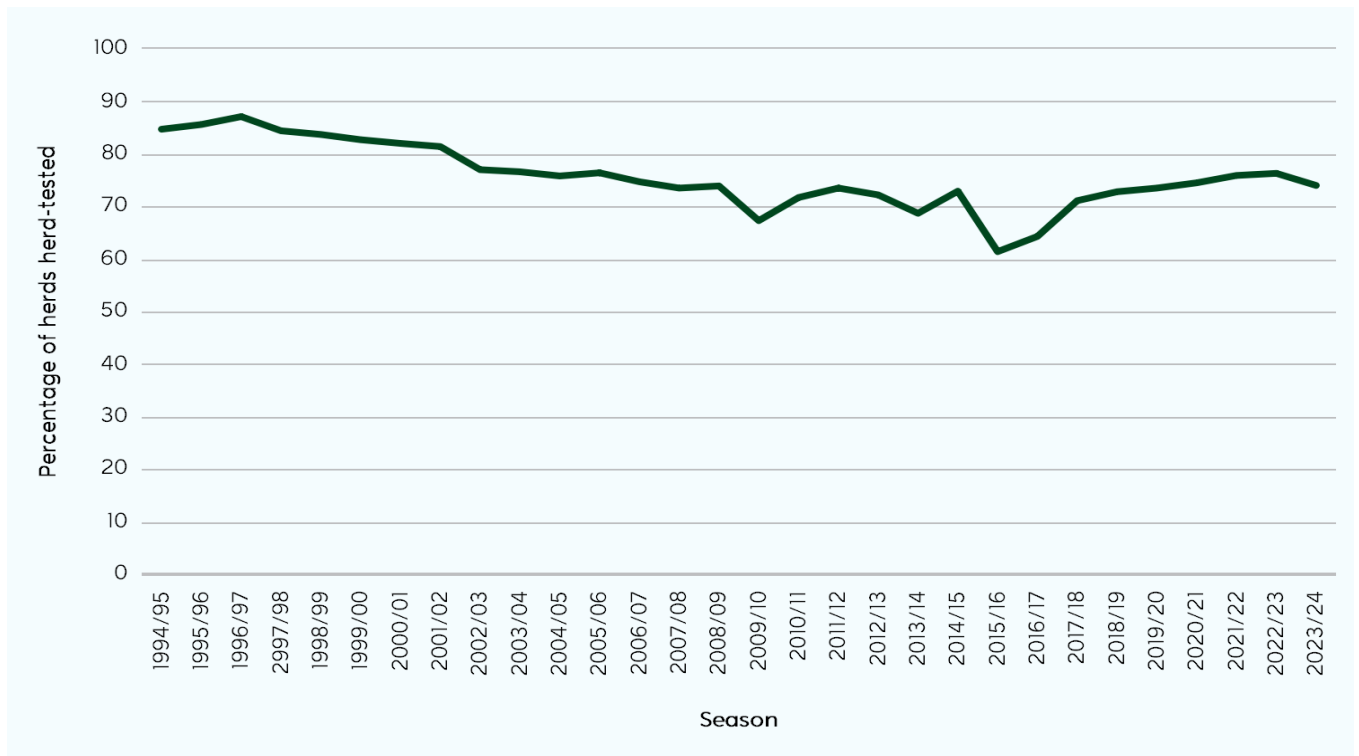
Table 4.1: Trend in the use of herd testing services

Season	Number of herds herd-tested	Total herds	% of total herds herd-tested	Number of cows herd-tested (000)	Total cows (000)	% of total cows herd-tested
2004/05	9,306	12,271	75.8	2,811	3,868	72.7
2005/06	9,082	11,883	76.4	2,846	3,832	74.3
2006/07	8,692	11,630	74.7	2,791	3,917	71.2
2007/08	8,405	11,436	73.5	2,871	4,013	71.5
2008/09	8,589	11,618	73.9	3,040	4,253	71.5
2009/10	7,870	11,691	67.3	2,812	4,397	64.0
2010/11	8,409	11,735	71.7	3,186	4,529	70.4
2011/12	8,673	11,798	73.5	3,362	4,634	72.6
2012/13	8,585	11,891	72.2	3,426	4,784	71.6
2013/14	8,188	11,927	68.7	3,294	4,923	66.9
2014/15	8,724	11,970	72.9	3,654	5,018	72.8
2015/16	7,316	11,908	61.4	3,030	4,998	60.6
2016/17	7,557	11,748	64.3	3,206	4,861	65.9
2017/18	8,242	11,590	71.1	3,615	4,993	72.4
2018/19	8,280	11,372	72.8	3,672	4,946	74.2
2019/20	8,212	11,179	73.5	3,689	4,922	75.0
2020/21	8,218	11,034	74.5	3,735	4,904	76.2
2021/22	8,191	10,796	75.9	3,790	4,842	78.3
2022/23	8,085	10,601	76.3	3,791	4,675	81.1
2023/24	7,761	10,485	74.0	3,623	4,702	77.1

Note: From 2021/22 onwards, herds with less than 50 herd tested animals are no longer counted.

Since the 2015/16 season, the percentage of herds herd-tested has shown a gradual increase, reaching a peak of 76.3% in the 2022/23 season (Graph 4.1). From 2015/2016 to 2022/23, the percentage of herd testing has increased from 61.4% to the mid-70% range. The 2023/24 value shows a herd-testing rate(74%) reflecting a modest decline from 2022/23 (76.3%) but consistent with previous years' averages.

Graph 4.1: Trend in the percentage of herds testing



The regional uptake of herd testing services in 2023/24 is summarized in Table 4.2. The number of cows tested represents all cows that were tested at least once during the season. Across regions, herd testing rates varied, with the East Coast being an exception at 42.9%. In all other regions, herd testing rates ranged from 62.9% to 81.5%. Wairarapa recorded the highest percentage of herds participating in herd testing at 81.5%, closely followed by Taranaki at 79.8%. These two regions also led in the percentage of cows tested, with Wairarapa at 83.1%, Taranaki at 81.5%, and North Canterbury following at 81.1%.

Table 4.2: Use of herd testing by region in 2023/24

Region	Herds tested	Total herds	Percentage of total herds	Cows tested	Total cows	Percentage of total cows	Average herd size tested	Average herd size
Northland	473	689	68.7	169,482	227,059	74.6	358	330
Auckland	190	302	62.9	62,799	88,206	71.2	331	292
Waikato	2,191	3,022	72.5	810,663	1,075,811	75.4	370	356
Bay of Plenty	327	461	70.9	122,328	167,732	72.9	374	364
Central Plateau	311	434	71.7	176,826	248,909	71.0	569	574
Western Uplands	62	81	76.5	31,749	43,526	72.9	512	537
East Coast	3	7	42.9	1,694	3,790	44.7	565	541
Hawkes Bay	46	64	71.9	33,613	43,205	77.8	731	675
Taranaki	1,161	1,455	79.8	365,437	448,448	81.5	315	308
Manawatu	333	474	70.3	155,100	197,236	78.6	466	416
Wairarapa	295	362	81.5	116,003	139,650	83.1	393	386
Nelson / Marlborough	143	181	79.0	55,429	69,018	80.3	388	381
West Coast	242	345	70.1	96,493	136,815	70.5	399	397
North Canterbury	681	875	77.8	568,227	700,320	81.1	834	800
South Canterbury	242	312	77.6	193,752	248,518	78.0	801	797
Otago	337	434	77.6	210,999	268,365	78.6	626	618
Southland	724	987	73.4	452,017	594,988	76.0	624	603
<b>New Zealand</b>	<b>7,761</b>	<b>10,485</b>	<b>74.0</b>	<b>3,622,611</b>	<b>4,701,596</b>	<b>77.1</b>	<b>467</b>	<b>448</b>

Note: Table includes figures from both herd test providers i.e. LIC and CRV.

## 4.2. Herd test averages

This data was sourced from the Dairy Industry Good Animal Database (DIGAD).

The lactation yield figures presented in this section pertain exclusively to herd-tested cows. Seasonal and breed averages (Sections 4.2.1 and 4.2.3) are based on lactation yields from herds that were tested four or more times during the season, with only cows lactating for at least 100 days included in the calculations. In contrast, monthly averages (Section 4.2.2) are derived from lactation yields of herds tested at least once during the season.

These figures differ from the average milksolids data in Chapters 2 and 3, which represent national and regional dairy statistics. The latter figures are based on all herds supplying milk to a dairy company, regardless of herd testing participation, and reflect the average production per cow as supplied to the dairy company. It is important to note that the milk production captured by herd testing is influenced by the timing of the tests relative to key events such as calving and drying off dates, as the number of production days in milk typically exceeds the herd testing days in milk.

Days-in-milk (herd testing) information is the number of days from the start of lactation to the calculated end of lactation. The start of lactation is four days from calving (with a maximum of 60 days between the estimated start of lactation and the first herd test). The end of lactation is the last herd test date plus 15 days. Therefore, the number of days-in-milk, calculated using this method, is influenced by the timing of the herd test and does not necessarily reflect the average lactation length of dairy cows.

The days-in-milk (production) figure is the number of days from the estimated start of lactation to the estimated end of lactation (reported since 1997/98). The results are derived from seasonal supplier tanker pick-up information (spring-calving herds). The days-in-milk (production) methodology provides a more accurate measure of the average lactation length of dairy cows than the herd testing methodology.

### 4.2.1. Seasonal averages

- Southland had the highest days in milk and milkfat, protein and milksolids production per cow (kg/cow).
- West Coast had the highest milkfat, protein and milksolids percentages.

The average per-cow statistics for each region are summarised in Table 4.3. Based on cows herd-tested, Southland recorded the highest values per cow for milk volume (5,427 litres), milkfat (265 kg), protein (221 kg) and milksolids (486 kg), for cows herd tested. West Coast recorded the highest percentage for milkfat (5.22%), protein (4.16%) and milksolids (9.38%). Herds in North Canterbury recorded the lowest average somatic cells (137,000 cells/ml), followed by herds in Southland and South Canterbury (140,000 and 146,000 cells/ml, respectively).

Table 4.3: Season herd test averages per cow by region in 2023/24

Region	Milk (litres)	Milkfat (kg)	Milkfat (%)	Protein (kg)	Protein (%)	Milksolids (kg)	Milksolids (%)	Days in milk (herd testing)	Days in milk (production)	Somatic cell count (000 cells/millilitre)
Northland	3,583	178	5.03	140	3.93	317	8.96	231	268	203
Auckland	4,202	208	5.05	162	3.91	370	8.95	239	279	181
Waikato	4,576	225	4.99	179	3.93	403	8.92	245	281	166
Bay of Plenty	4,233	207	4.94	164	3.91	371	8.85	238	273	190
Central Plateau	4,660	227	4.95	183	3.94	410	8.89	240	278	173
Western Uplands	3,880	195	5.09	155	4.02	350	9.11	242	272	167
East Coast	-	-	-	-	-	-	-	-	-	-
Hawkes Bay	4,434	212	4.85	174	3.93	386	8.78	227	270	237
Taranaki	4,617	235	5.16	184	4.02	419	9.17	240	270	155
Manawatu	4,832	235	4.93	187	3.90	421	8.82	238	280	191
Wairarapa	4,400	218	5.04	173	3.97	392	9.01	242	271	194
Nelson / Marlborough	4,562	225	5.03	181	4.00	406	9.03	243	270	151
West Coast	4,266	218	5.22	176	4.16	394	9.38	237	272	156
North Canterbury	5,159	251	4.92	205	4.00	456	8.92	239	283	137

Region	Milk (litres)	Milkfat (kg)	Milkfat (%)	Protein (kg)	Protein (%)	Milksolids (kg)	Milksolids (%)	Days in milk (herd testing)	Days in milk (production)	Somatic cell count (000 cells/millilitre)
South Canterbury	5,005	246	4.97	202	4.05	448	9.02	241	278	146
Otago	5,092	251	4.98	206	4.08	457	9.06	245	271	150
Southland	5,427	265	4.95	221	4.09	486	9.04	245	284	140
<b>New Zealand</b>	<b>4,761</b>	<b>234</b>	<b>4.99</b>	<b>189</b>	<b>3.99</b>	<b>423</b>	<b>8.99</b>	<b>241</b>	<b>277</b>	<b>161</b>

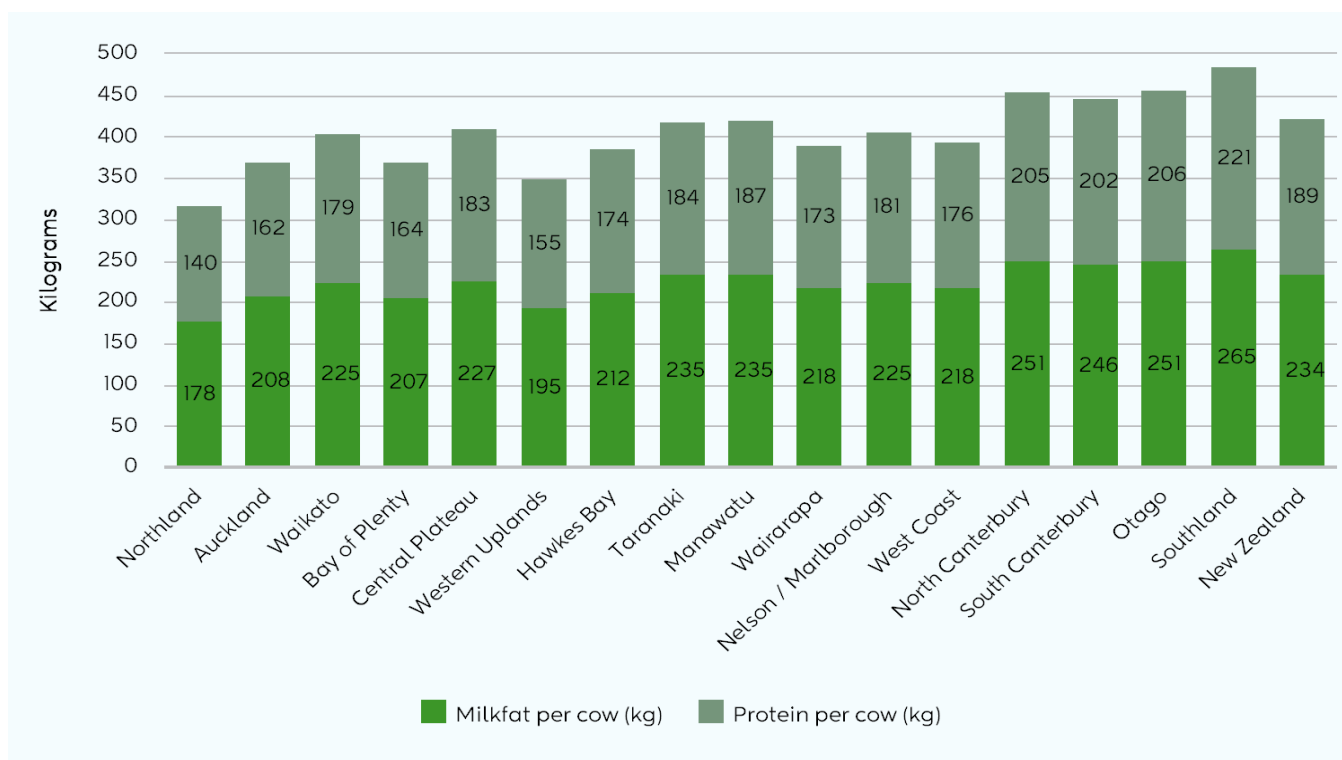
Note:

- This table is based on the LIC Herd Improvement Database and CRV herd test results.
- No data for the East Coast region was reported as this region had fewer than five herds contributing data.

The 2023/24 lactation regional averages for milkfat and protein in herd-tested cows show variability across regions (Graph 4.2). Milkfat production across regions varied between 178 and 265 kg/cow, while protein production varied between 140 and 221 kg/cow.

Southland, Otago and North Canterbury recorded the highest milkfat production per cow (265, 251 and 251 kg, respectively). These regions also recorded the highest protein production per cow (221, 206, 205 kg, respectively). At the other end of the scale, Northland recorded the lowest milkfat and protein per cow (178 and 140 kg, respectively), followed by Western Uplands (195 and 155 kg respectively). No data for the East Coast region was reported as this region had less than 5 herds contributing data.

Graph 4.2: Average milkfat and protein production per cow by region in 2023/24



- Herd test averages for milkfat, protein and milksolids percentages are the highest recorded.

Milk production (litres) per cow in 2023/24 increased slightly compared to the previous season, but it was lower than the 5-year average of 4,774 litres/cow (Table 4.4). In 2023/24, the percentages of milkfat, protein and milksolids in herd-tested cows were 2%, 1% and 3% higher than the previous season respectively, and the highest on record.

The average herd somatic cell count decreased from 169,000 in 2022/23 to 161,000 cells/millilitre in 2023/24 which is 3.8% lower than the 5-year average and the lowest in record. The average days in milk (production) was 277 in 2023/24, the highest on record.



Table 4.4: Trend in the national herd test averages

Season	Milk (litres)	Milkfat (kg)	Milkfat (%)	Protein (kg)	Protein (%)	Milksolids (kg)	Milksolids (%)	Days in milk (herd testing)	Days in milk (production)	Somatic cell count (000 cells/millilitre)
2004/05	4,033	190	4.82	148	3.70	338	8.52	235	265	224
2005/06	4,143	195	4.79	152	3.71	347	8.51	236	266	202
2006/07	4,167	198	4.85	155	3.76	353	8.61	237	267	221
2007/08	4,081	191	4.77	151	3.73	342	8.51	231	252	236
2008/09	4,136	194	4.80	154	3.75	348	8.55	232	266	237
2009/10	4,187	198	4.82	157	3.79	355	8.61	232	260	223
2010/11	4,221	200	4.83	158	3.78	358	8.62	235	274	224
2011/12	4,513	215	4.87	171	3.83	387	8.70	240	275	199
2012/13	4,501	213	4.82	171	3.82	383	8.64	232	258	198
2013/14	4,662	221	4.83	177	3.83	398	8.66	237	266	179
2014/15	4,581	219	4.87	176	3.88	396	8.75	235	273	174
2015/16	4,587	217	4.82	176	3.87	393	8.69	237	276	180
2016/17	4,608	220	4.87	178	3.90	399	8.77	241	276	176
2017/18	4,595	219	4.86	177	3.87	396	8.72	240	274	179
2018/19	4,754	226	4.82	184	3.89	409	8.71	239	271	167
2019/20	4,784	228	4.84	186	3.92	414	8.76	238	268	168
2020/21	4,871	232	4.84	190	3.92	422	8.76	243	276	167
2021/22	4,751	228	4.86	185	3.91	412	8.77	243	274	172
2022/23	4,703	227	4.90	184	3.94	411	8.84	240	276	169
2023/24	4,761	234	4.99	189	3.99	423	8.99	241	277	161

## 4.2.2. Monthly averages

- Milk, milkfat and protein production highest in September and October.
- Somatic cell count was lowest in October and November.

The seasonal average figures presented in Table 4.5 are calculated by averaging monthly herd test data at the national level. The number of samples processed for herd testing influences these results. For instance, the statistics during the winter months of May, June, and July are based on far fewer cows than those for other months, as only a few herds (generally winter milk herds) are tested during this period. Differences in climate between regions (which in turn can affect the mating period), available feed, and cow condition are reflected in differing months of peak production.

All cows that were herd tested in each month were included, provided they were tested at least once during the season (Table 4.5). Average production per cow peaked between August and October, with most regions peaking in October.

Table 4.5: Monthly herd test averages by region in 2023/24

### Average litres of milk per cow per day

Region	2023							2024					Season average
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
Northland	17.07	16.99	19.10	19.43	18.76	17.05	15.34	13.35	11.63	10.37	10.20	15.11	15.37
Auckland	18.02	18.44	19.33	20.81	20.35	18.79	16.74	14.58	12.61	11.28	11.29	16.09	16.53
Waikato	18.94	19.33	21.50	22.49	21.72	19.58	17.79	15.49	13.40	11.57	11.22	14.77	17.32
Bay of Plenty	16.90	17.30	22.00	22.35	21.73	19.87	18.09	15.33	13.92	11.30	10.65	12.57	16.83
Central Plateau	17.22	19.14	21.54	23.50	24.07	21.44	20.11	17.23	15.17	13.25	12.19	13.51	18.20
Western Uplands	9.92	10.02	21.50	20.50	20.50	18.62	16.87	14.39	12.76	10.67	9.56	9.17	14.54
East Coast	15.94	14.08	15.78	18.60	21.05	17.66	17.40	13.20	14.17	10.26	10.09	20.38	15.72
Hawkes Bay	18.07	18.13	21.28	21.97	23.16	19.95	18.89	15.71	14.69	12.30	12.33	13.90	17.53
Taranaki	18.90	19.51	21.35	22.63	22.20	20.03	18.22	16.42	14.72	12.55	11.45	14.14	17.68

Region	2023 Jun	Jul	Aug	Sep	Oct	Nov	Dec	2024 Jan	Feb	Mar	Apr	May	Season average
Manawatu	17.66	18.31	21.11	23.66	23.56	21.70	20.26	17.40	15.93	13.99	12.63	14.61	18.40
Wairarapa	15.31	16.68	19.50	22.05	22.06	20.46	18.52	16.25	14.73	12.71	11.25	12.13	16.80
Nelson / Marlborough	16.91	15.27	18.54	22.52	22.52	20.84	18.38	16.93	14.81	12.80	11.26	10.86	16.80
West Coast	18.17	13.05	18.75	21.81	21.92	19.98	18.07	15.64	14.57	12.52	10.88	9.77	16.26
North Canterbury	18.84	19.87	20.41	25.01	25.76	23.86	22.47	20.25	18.76	16.48	14.53	13.52	19.98
South Canterbury	19.56	21.26	22.35	24.68	25.70	23.60	21.81	19.91	18.15	15.96	14.07	13.17	20.02
Otago	15.98	17.90	20.61	24.76	24.81	23.28	20.95	18.90	17.39	15.31	12.86	12.41	18.76
Southland	15.16	17.53	20.49	25.04	25.46	23.66	21.78	19.47	18.18	16.08	13.88	12.98	19.14
<b>New Zealand</b>	<b>17.87</b>	<b>18.54</b>	<b>20.88</b>	<b>22.85</b>	<b>23.33</b>	<b>20.9</b>	<b>19.46</b>	<b>17.00</b>	<b>15.48</b>	<b>13.43</b>	<b>12.43</b>	<b>13.5</b>	<b>17.97</b>

#### Average kg of milkfat per cow per day

Region	2023 Jun	Jul	Aug	Sep	Oct	Nov	Dec	2024 Jan	Feb	Mar	Apr	May	Season average
Northland	0.78	0.79	0.88	0.89	0.86	0.80	0.72	0.66	0.60	0.57	0.56	0.73	0.74
Auckland	0.81	0.82	0.86	0.93	0.91	0.86	0.78	0.70	0.64	0.61	0.62	0.80	0.78
Waikato	0.88	0.89	1.00	1.03	0.99	0.91	0.84	0.76	0.70	0.65	0.64	0.78	0.84
Bay of Plenty	0.79	0.82	1.01	1.00	0.98	0.90	0.83	0.74	0.70	0.62	0.60	0.67	0.80
Central Plateau	0.83	0.87	0.98	1.06	1.07	0.97	0.92	0.83	0.76	0.72	0.68	0.73	0.87
Western Uplands	0.59	0.64	1.04	0.96	0.95	0.87	0.79	0.72	0.66	0.60	0.57	0.55	0.74
East Coast	0.75	0.63	0.68	0.81	0.90	0.79	0.75	0.64	0.66	0.54	0.55	0.92	0.72
Hawkes Bay	0.86	0.84	0.95	0.98	1.01	0.91	0.86	0.74	0.72	0.64	0.66	0.70	0.82
Taranaki	0.92	0.94	1.01	1.06	1.04	0.98	0.90	0.85	0.79	0.72	0.68	0.78	0.89
Manawatu	0.83	0.85	0.95	1.05	1.04	0.97	0.92	0.82	0.78	0.73	0.68	0.76	0.86
Wairarapa	0.75	0.80	0.93	1.01	1.01	0.96	0.88	0.80	0.76	0.70	0.65	0.67	0.83
Nelson / Marlborough	0.80	0.73	0.90	1.03	1.03	0.97	0.88	0.83	0.76	0.71	0.66	0.63	0.83
West Coast	1.03	0.78	0.89	1.02	1.01	0.96	0.88	0.79	0.77	0.71	0.66	0.61	0.84
North Canterbury	0.89	0.92	0.93	1.10	1.13	1.06	1.01	0.94	0.91	0.85	0.79	0.75	0.94
South Canterbury	0.91	0.90	1.02	1.10	1.11	1.05	0.99	0.92	0.89	0.83	0.78	0.73	0.94
Otago	0.82	0.88	0.95	1.10	1.08	1.04	0.95	0.89	0.85	0.80	0.72	0.72	0.90
Southland	0.81	0.90	0.99	1.12	1.12	1.06	1.00	0.92	0.90	0.84	0.78	0.74	0.93
<b>New Zealand</b>	<b>0.83</b>	<b>0.86</b>	<b>0.96</b>	<b>1.04</b>	<b>1.05</b>	<b>0.96</b>	<b>0.91</b>	<b>0.82</b>	<b>0.78</b>	<b>0.72</b>	<b>0.70</b>	<b>0.74</b>	<b>0.87</b>

#### Average kg of protein per cow per day

Region	2023 Jun	Jul	Aug	Sep	Oct	Nov	Dec	2024 Jan	Feb	Mar	Apr	May	Season average
Northland	0.62	0.64	0.71	0.72	0.69	0.64	0.57	0.50	0.45	0.43	0.43	0.59	0.58
Auckland	0.65	0.66	0.70	0.76	0.75	0.70	0.62	0.54	0.48	0.46	0.48	0.63	0.62
Waikato	0.72	0.74	0.80	0.84	0.81	0.74	0.67	0.58	0.52	0.48	0.49	0.61	0.67
Bay of Plenty	0.67	0.67	0.81	0.82	0.80	0.73	0.66	0.57	0.53	0.47	0.46	0.54	0.64
Central Plateau	0.68	0.74	0.81	0.87	0.89	0.79	0.74	0.64	0.58	0.55	0.53	0.58	0.70
Western Uplands	0.46	0.49	0.83	0.77	0.77	0.70	0.63	0.55	0.50	0.45	0.43	0.43	0.58
East Coast	0.57	0.52	0.56	0.68	0.77	0.65	0.62	0.49	0.51	0.42	0.43	0.73	0.58
Hawkes Bay	0.69	0.70	0.81	0.83	0.86	0.75	0.71	0.59	0.56	0.50	0.53	0.57	0.68
Taranaki	0.73	0.76	0.81	0.86	0.85	0.78	0.71	0.65	0.59	0.53	0.51	0.61	0.70
Manawatu	0.66	0.69	0.78	0.87	0.87	0.80	0.75	0.65	0.61	0.57	0.54	0.61	0.70
Wairarapa	0.59	0.64	0.74	0.82	0.83	0.77	0.70	0.62	0.58	0.53	0.50	0.52	0.65

Region	2023							2024					Season average
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
Nelson / Marlborough	0.61	0.57	0.70	0.84	0.84	0.78	0.69	0.64	0.58	0.54	0.51	0.49	0.65
West Coast	0.81	0.62	0.78	0.84	0.83	0.77	0.69	0.61	0.59	0.54	0.51	0.47	0.67
North Canterbury	0.72	0.74	0.75	0.93	0.97	0.90	0.85	0.78	0.75	0.70	0.65	0.61	0.78
South Canterbury	0.74	0.79	0.83	0.92	0.97	0.89	0.83	0.77	0.73	0.68	0.63	0.60	0.78
Otago	0.63	0.70	0.77	0.92	0.93	0.88	0.80	0.73	0.70	0.65	0.58	0.58	0.74
Southland	0.64	0.69	0.79	0.94	0.96	0.90	0.83	0.76	0.74	0.68	0.63	0.60	0.76
<b>New Zealand</b>	<b>0.67</b>	<b>0.70</b>	<b>0.78</b>	<b>0.85</b>	<b>0.87</b>	<b>0.79</b>	<b>0.74</b>	<b>0.65</b>	<b>0.61</b>	<b>0.56</b>	<b>0.55</b>	<b>0.59</b>	<b>0.70</b>

#### Average somatic cell count (000 cells per millilitre)

Region	2023							2024					Season average
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
Northland	223	245	207	187	197	189	218	246	275	290	314	272	239
Auckland	229	208	193	190	187	179	202	223	258	269	287	230	221
Waikato	221	224	187	160	159	147	164	184	211	231	244	240	198
Bay of Plenty	288	249	216	187	181	171	186	211	231	251	271	282	227
Central Plateau	288	217	203	166	168	166	177	196	212	230	238	256	210
Western Uplands	358	158	194	168	172	162	178	194	218	245	261	262	214
East Coast	313	312	329	244	222	215	231	271	278	318	336	341	284
Hawkes Bay	285	277	224	234	205	212	213	246	252	285	281	301	251
Taranaki	286	240	214	168	166	162	169	184	206	223	242	241	208
Manawatu	282	257	247	205	207	199	209	235	245	256	274	267	240
Wairarapa	277	278	276	209	201	194	202	220	240	255	273	271	241
Nelson / Marlborough	261	250	282	166	163	161	166	188	204	221	235	270	214
West Coast	281	363	286	161	151	163	160	195	191	216	236	269	223
North Canterbury	248	243	251	176	164	165	157	171	167	171	187	210	192
South Canterbury	250	255	309	183	169	168	160	178	172	180	189	211	202
Otago	266	283	286	183	164	165	163	174	177	181	200	215	205
Southland	316	275	328	183	168	171	162	180	174	187	191	202	211
<b>New Zealand</b>	<b>241</b>	<b>242</b>	<b>204</b>	<b>175</b>	<b>170</b>	<b>165</b>	<b>172</b>	<b>192</b>	<b>204</b>	<b>218</b>	<b>228</b>	<b>232</b>	<b>204</b>

### 4.2.3. Breed category averages

- Holstein-Friesian cows had the highest production levels in terms of litres, protein, and milksolids (kg).
- Jersey cows achieved the highest percentages for milkfat, protein, and milksolids.
- Holstein-Friesian/Jersey crossbred cows produced highest milkfat (kg) production.

Herd test statistics by breed category (Table 4.6) include herds that performed four or more herd tests during the season. This data was sourced from DIGAD.

On average, milk production (litres) was higher in Holstein-Friesian cows (5,250), which also had the highest protein (198 kg) and milksolids (435 kg) compared to other breeds. Holstein-Friesian/Jersey Crossbred cows had the highest milkfat production (238 kg), while Jerseys cows had the highest percentages of milkfat (5.71%), protein (4.26%) and milksolids (9.98%).

In 2023/24, the age group that produced the highest milksolids (kg) across all breeds were the six-year-olds.

Table 4.6: Herd test averages by breed category and cow age in 2023/24

**Holstein-Friesian**

Age	Cows tested	Days in milk	Milk (litres)	Milkfat (kg)	Protein (kg)	Milksolids (kg)	Milkfat (%)	Protein (%)	Milksolids (%)
2	47,222	250	4,198	195.8	160.4	356.2	4.72	3.84	8.56
3	43,607	245	5,072	231.5	194.1	425.6	4.61	3.84	8.46
4	39,161	242	5,557	252.3	211.3	463.5	4.58	3.82	8.40
5	35,322	241	5,774	257.1	218.3	475.4	4.50	3.79	8.29
6	29,374	239	5,840	258.5	219.2	477.7	4.47	3.76	8.23
7	21,798	235	5,679	250.2	212.7	463.0	4.44	3.76	8.20
8	16,034	233	5,557	244.9	206.9	451.8	4.44	3.73	8.17
9	10,216	229	5,288	233.3	195.9	429.2	4.44	3.72	8.16
10+	10,591	221	4,777	211.2	174.4	385.6	4.45	3.66	8.11
<b>Total</b>	<b>253,325</b>	<b>241</b>	<b>5,250</b>	<b>236.4</b>	<b>198.4</b>	<b>434.9</b>	<b>4.56</b>	<b>3.80</b>	<b>8.35</b>

**Jersey**

Age	Cows tested	Days in milk	Milk (litres)	Milkfat (kg)	Protein (kg)	Milksolids (kg)	Milkfat (%)	Protein (%)	Milksolids (%)
2	21,279	250	2,993	172.6	126.8	299.4	5.79	4.25	10.04
3	20,423	244	3,543	205.0	152.9	357.9	5.81	4.32	10.13
4	16,958	243	3,872	223.0	166.3	389.4	5.78	4.30	10.09
5	14,335	242	4,040	227.3	171.7	399.0	5.64	4.26	9.90
6	11,925	241	4,053	229.1	172.5	401.7	5.68	4.26	9.94
7	9,026	237	3,979	222.8	168.3	391.1	5.62	4.23	9.86
8	6,418	235	3,874	216.7	163.3	380.0	5.61	4.22	9.83
9	4,499	232	3,761	207.4	157.1	364.5	5.54	4.18	9.72
10+	4,845	225	3,479	191.9	144.4	336.3	5.53	4.15	9.69
<b>Total</b>	<b>109,708</b>	<b>242</b>	<b>3,669</b>	<b>208.7</b>	<b>156.2</b>	<b>364.9</b>	<b>5.71</b>	<b>4.26</b>	<b>9.98</b>

**Holstein-Friesian/Jersey Crossbreed**

Age	Cows tested	Days in milk	Milk (litres)	Milkfat (kg)	Protein (kg)	Milksolids (kg)	Milkfat (%)	Protein (%)	Milksolids (%)
2	125,559	250	3,762	194.5	152.3	346.8	5.21	4.06	9.27
3	127,441	244	4,558	232.6	186.2	418.7	5.14	4.10	9.24
4	111,042	242	5,023	252.5	202.9	455.4	5.06	4.05	9.12
5	97,885	242	5,264	258.4	210.4	468.8	4.95	4.01	8.95
6	77,860	240	5,307	260.8	211.3	472.0	4.95	3.99	8.94
7	57,119	237	5,207	254.7	206.7	461.4	4.93	3.98	8.91
8	39,457	234	5,086	249.1	200.9	450.1	4.93	3.96	8.9
9	26,766	231	4,856	239.9	191.6	431.5	4.97	3.96	8.93
10+	27,759	224	4,497	220.9	174.7	395.6	4.94	3.89	8.83
<b>Total</b>	<b>690,888</b>	<b>242</b>	<b>4,765</b>	<b>238.3</b>	<b>191.3</b>	<b>429.5</b>	<b>5.05</b>	<b>4.03</b>	<b>9.08</b>

**Ayrshire**

Age	Cows tested	Days in milk	Milk (litres)	Milkfat (kg)	Protein (kg)	Milksolids (kg)	Milkfat (%)	Protein (%)	Milksolids (%)
2	1,595	255	3,848	172.7	138.2	310.9	4.51	3.60	8.11
3	1,341	252	4,636	206.6	168.4	374.9	4.48	3.63	8.11
4	1,210	252	5,049	222.5	182.7	405.2	4.43	3.62	8.05
5	996	252	5,228	226.8	188.7	415.5	4.37	3.61	7.98
6	831	248	5,146	223.5	184.7	408.2	4.37	3.59	7.96

Age	Cows tested	Days in milk	Milk (litres)	Milkfat (kg)	Protein (kg)	Milksolids (kg)	Milkfat (%)	Protein (%)	Milksolids (%)
7	680	247	5,129	222.7	184.5	407.2	4.35	3.60	7.95
8	499	246	5,259	226.8	188.6	415.4	4.32	3.59	7.92
9	382	240	4,961	212.8	176.4	389.1	4.31	3.57	7.88
10+	471	236	4,670	201.8	165.2	367.0	4.34	3.54	7.88
<b>Total</b>	<b>8,005</b>	<b>250</b>	<b>4,766</b>	<b>209.1</b>	<b>171.6</b>	<b>380.7</b>	<b>4.42</b>	<b>3.61</b>	<b>8.02</b>

In the past, liveweight averages for the three main breeds have been calculated from records in the LIC Herd Improvement Database. From the 2021/22 season, these calculations are now based on records in the DIGAD.

Liveweight by age and breed is presented in Table 4.7, which is also illustrated in Graph 4.3. Across all the age groups, Holstein-Friesian cows had the highest average liveweight, while Jersey cows had the lowest.

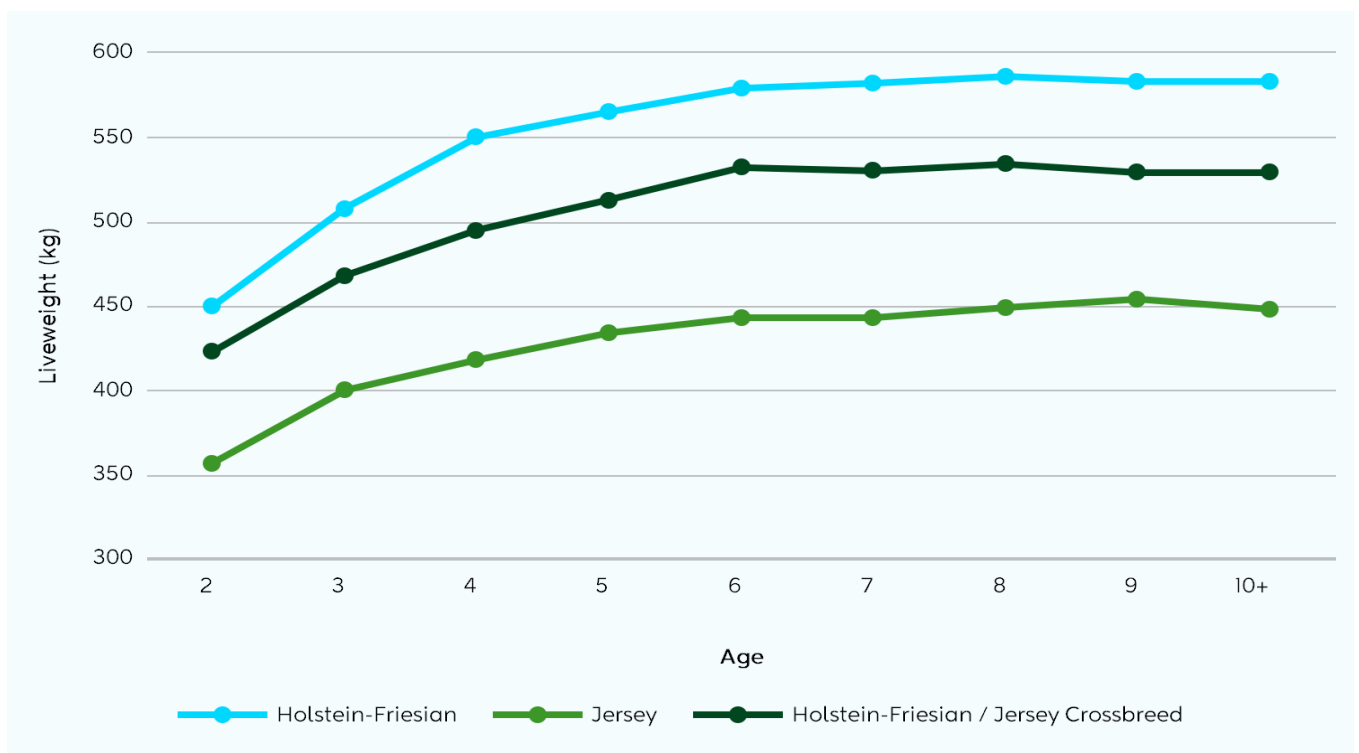
Table 4.7: Liveweight by age and by breed category of cow in 2023/24

Age	Holstein-Friesian		Jersey		Holstein-Friesian/Jersey Crossbreed	
	Average liveweight (kg)	Number of cows	Average liveweight (kg)	Number of cows	Average liveweight (kg)	Number of cows
2	450	10,583	357	5,816	423	42,568
3	508	1,328	400	931	468	6,633
4	550	1,094	418	685	495	5,263
5	565	1,122	434	530	513	4,541
6	579	943	443	449	532	3,573
7	582	602	443	334	530	2,545
8	586	487	449	205	534	1,506
9	583	311	454	107	529	1,094
10+	583	253	448	110	529	1,004
<b>Weighted Average</b>	<b>537</b>		<b>414</b>		<b>492</b>	

Note:

- From 2021/22, liveweights are calculated from the DIGAD data.

Graph 4.3: Liveweight by age and by breed category of cow in 2023/24



### 4.3. Artificial Breeding (AB) statistics

- 3.8 million cows were mated to AB.
- The percentage of cows to AB was the lowest of the last 8 seasons.

Historically, all artificial inseminations (AI) were recorded in the LIC Herd Improvement Database which served as the main source of insemination data for many years. However, with various changes over time LIC no longer holds all AI records. For the 1997/98 season and onwards, insemination data now comes from the DIGAD which has a more complete set of records from AB service providers (see <https://www.dairynz.co.nz/animal/animal-evaluation/animal-database/> for more information about this database).

Table 4.8 provides a summary of cows mated to AB for the last nine seasons. North Canterbury, Otago and South Canterbury had the highest percentage of cows mated to AB (91.6%, 86.3% and 84.6%, respectively). The number of yearlings mated to AB decreased for the fifth consecutive season, from 258,719 in 2018/19 to 203,275 in 2023/24.

The percentage of cows mated through AB has varied between 81.4% and 82.2% in recent years, but in 2023/24 it dropped to 81.1%, the lowest of the last six years (Graph 4.4).

Table 4.8: Cows and yearlings to AB

#### Cows to AB

Region	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Northland	201,375	199,632	196,026	195,621	189,878	186,038	175,319	167,303	158,757
Auckland	75,051	74,420	70,380	69,861	71,851	70,120	65,816	63,909	60,863
Waikato	914,421	886,130	890,176	897,212	881,050	873,837	865,724	819,618	823,668
Bay of Plenty	154,235	146,688	145,504	146,087	142,938	139,795	133,432	125,843	120,890
Central Plateau	199,126	204,888	211,443	214,979	213,610	209,742	203,063	199,229	197,502
Western Uplands	29,045	30,772	31,396	33,127	32,906	31,736	30,690	29,532	30,786
East Coast	2,431	2,290	2,603	1,607	1,799	1,942	1,730	1,896	1,850
Hawkes Bay	38,912	36,904	41,707	41,646	39,906	37,593	36,851	36,020	31,160
Taranaki	414,757	396,796	398,339	400,927	397,993	392,771	391,354	374,485	376,223
Manawatu	169,732	166,311	166,464	168,730	164,735	164,549	162,565	154,356	155,621
Wairarapa	133,622	131,522	131,403	131,603	128,261	124,941	120,680	115,797	113,612
Nelson / Marlborough	71,060	68,652	67,212	66,560	63,194	61,325	56,842	57,050	57,467
West Coast	125,130	119,911	119,368	119,942	117,433	118,743	113,977	107,893	108,677
North Canterbury	596,988	605,246	624,347	641,371	640,339	645,071	642,531	629,175	641,540
South Canterbury	200,215	203,784	209,434	217,619	214,864	217,202	213,525	209,010	210,289
Otago	220,782	220,678	230,692	228,920	228,278	233,345	233,268	231,610	231,687
Southland	480,368	477,041	490,929	490,235	490,623	495,835	494,520	485,427	492,524
<b>New Zealand</b>	<b>4,027,250</b>	<b>3,971,665</b>	<b>4,027,423</b>	<b>4,066,047</b>	<b>4,019,658</b>	<b>4,004,585</b>	<b>3,941,887</b>	<b>3,808,153</b>	<b>3,813,116</b>

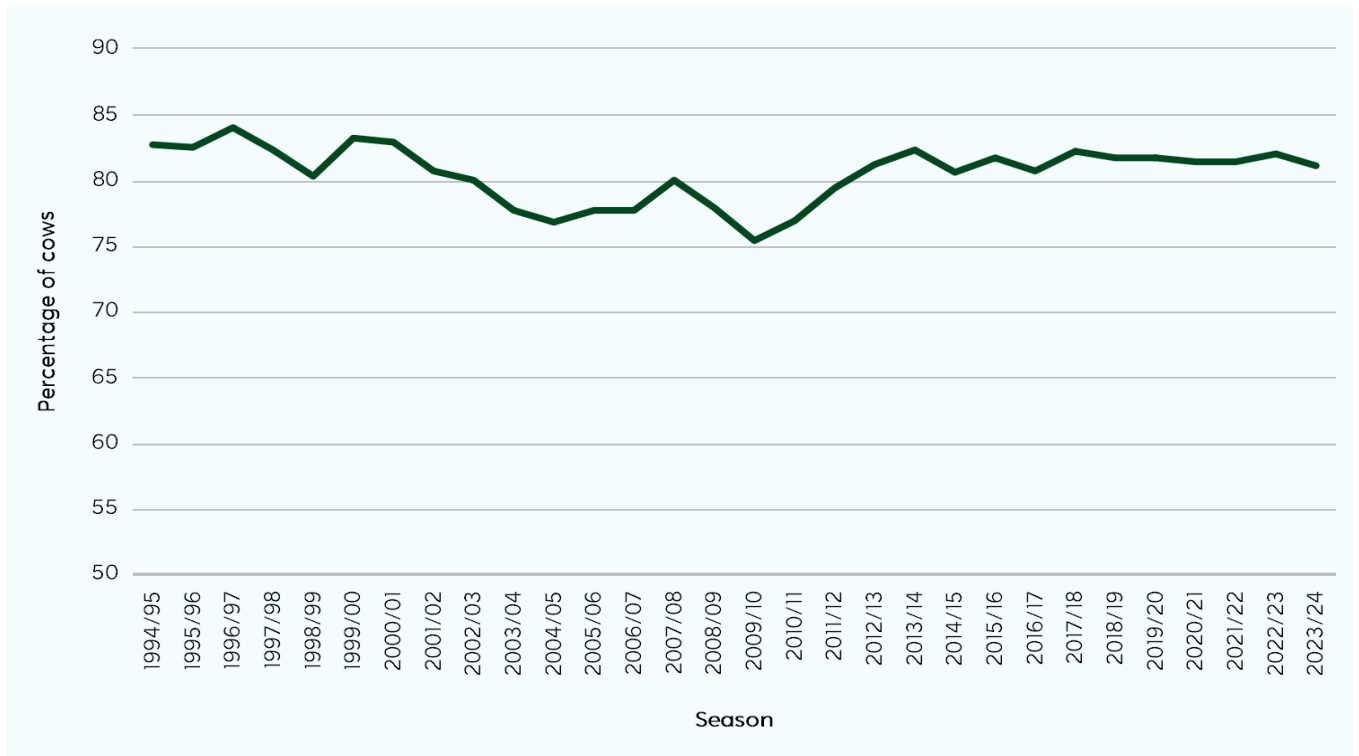
## Percentage of Cows to AB

Region	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Northland	71.8	74.2	72.1	74.1	73.5	74.2	72.1	73.3	69.9
Auckland	67.5	71.3	66.7	70.3	75.0	74.0	70.3	75.1	69.0
Waikato	79.4	79.3	78.4	80.3	79.8	79.5	80.1	77.9	76.6
Bay of Plenty	77.6	76.6	74.3	76.9	77.1	76.2	74.7	74.0	72.1
Central Plateau	74.4	75.6	75.3	77.2	76.2	74.4	72.1	75.9	79.3
Western Uplands	62.2	69.7	65.2	68.8	70.1	65.3	64.6	65.3	70.7
East Coast	41.3	38.3	44.2	27.3	29.9	40.4	35.0	37.1	48.8
Hawkes Bay	79.8	80.8	86.1	87.2	87.7	85.1	83.5	85.3	72.1
Taranaki	85.2	83.9	83.5	85.9	85.1	84.3	85.0	84.1	83.9
Manawatu	76.8	78.1	75.5	78.0	76.9	76.3	77.3	77.2	78.9
Wairarapa	80.4	81.9	81.0	84.0	84.1	83.0	81.4	81.2	81.4
Nelson / Marlborough	82.6	80.6	80.8	80.9	79.0	82.3	77.2	80.5	83.3
West Coast	79.2	77.0	77.5	78.4	78.3	78.8	77.5	77.6	79.4
North Canterbury	86.5	90.0	89.0	90.6	89.0	89.2	89.2	89.5	91.6
South Canterbury	83.4	87.6	83.5	86.7	85.2	88.0	87.1	84.9	84.6
Otago	84.2	86.0	86.1	84.9	84.1	85.4	86.2	94.2	86.3
Southland	83.5	84.7	84.2	82.8	82.9	83.2	83.6	86.7	82.8
<b>New Zealand</b>	<b>80.6</b>	<b>81.7</b>	<b>80.7</b>	<b>82.2</b>	<b>81.7</b>	<b>81.7</b>	<b>81.4</b>	<b>82.0</b>	<b>81.1</b>

## Yearlings to AB

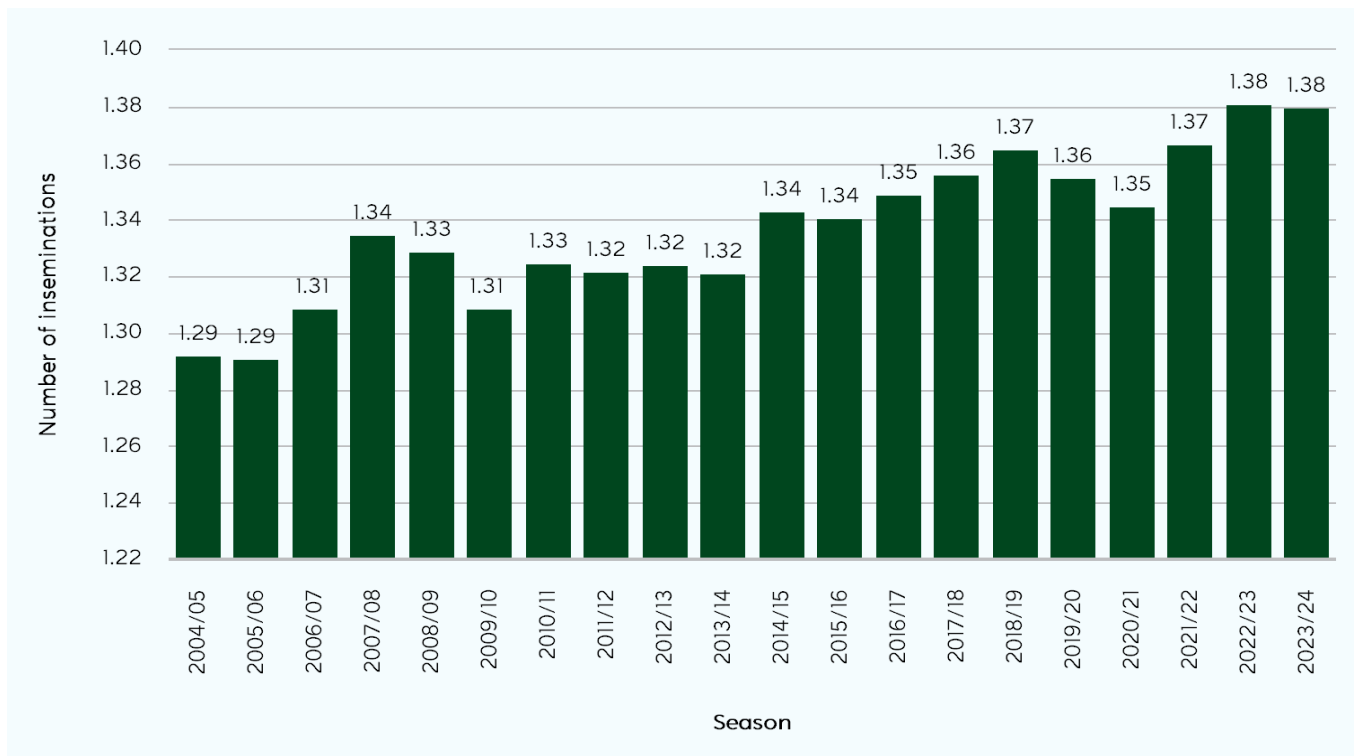
Region	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Northland	10,085	10,484	11,258	12,070	10,708	9,648	9,722	10,373	9,153
Auckland	3,132	3,053	3,226	3,219	2,892	3,987	4,251	3,347	3,293
Waikato	25,116	23,629	22,840	22,551	20,717	20,347	20,923	19,960	16,736
Bay of Plenty	8,779	8,845	9,178	9,104	9,562	8,952	9,330	7,413	5,966
Central Plateau	4,188	4,814	5,374	7,244	7,398	6,060	7,759	6,434	7,113
Western Uplands	2,523	2,305	2,170	2,502	2,497	2,254	2,031	2,014	2,119
East Coast	60	126	152	169	151	160	409	713	775
Hawkes Bay	4,583	1,864	3,213	3,302	2,552	2,343	2,022	2,353	2,537
Taranaki	4,726	4,539	4,625	5,666	5,542	5,156	5,754	5,382	4,739
Manawatu	5,808	6,860	6,763	7,587	6,077	6,898	6,447	5,918	6,714
Wairarapa	4,789	5,141	4,626	5,130	4,728	4,895	4,514	4,548	3,495
Nelson / Marlborough	3,318	3,834	4,404	4,648	4,545	3,592	3,688	3,555	2,946
West Coast	3,988	4,954	5,569	6,101	6,702	8,647	8,451	7,679	7,449
North Canterbury	39,060	45,613	58,751	69,553	73,242	68,046	64,334	62,180	57,287
South Canterbury	22,969	23,820	24,033	25,647	24,764	23,969	25,921	21,490	21,732
Otago	18,680	19,747	23,992	28,119	28,332	25,911	26,052	23,274	20,101
Southland	30,904	31,994	39,970	46,107	42,047	38,941	37,679	36,893	31,120
<b>New Zealand</b>	<b>192,708</b>	<b>201,622</b>	<b>230,144</b>	<b>258,719</b>	<b>252,456</b>	<b>239,806</b>	<b>239,287</b>	<b>223,526</b>	<b>203,275</b>

Graph 4.4: Trend in the percentage of cows to Artificial Breeding



In 2023/24, the average number of inseminations per cow was 1.38 (Graph 4.5).

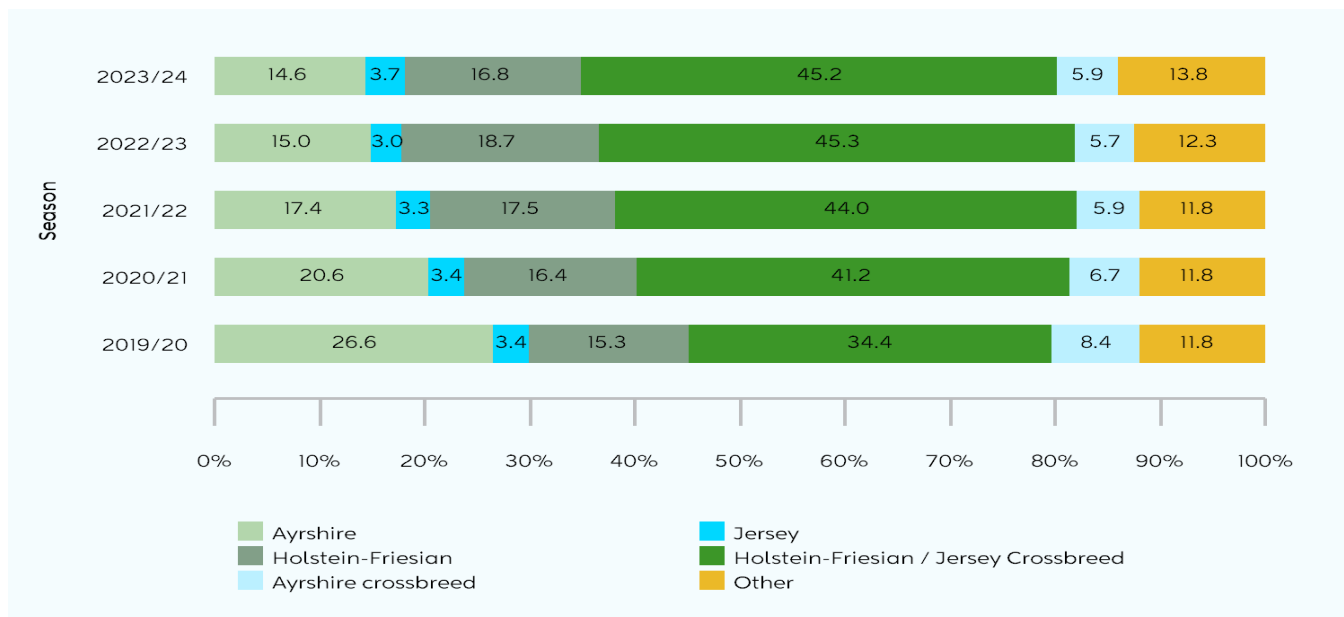
Graph 4.5: Average number of inseminations per cow



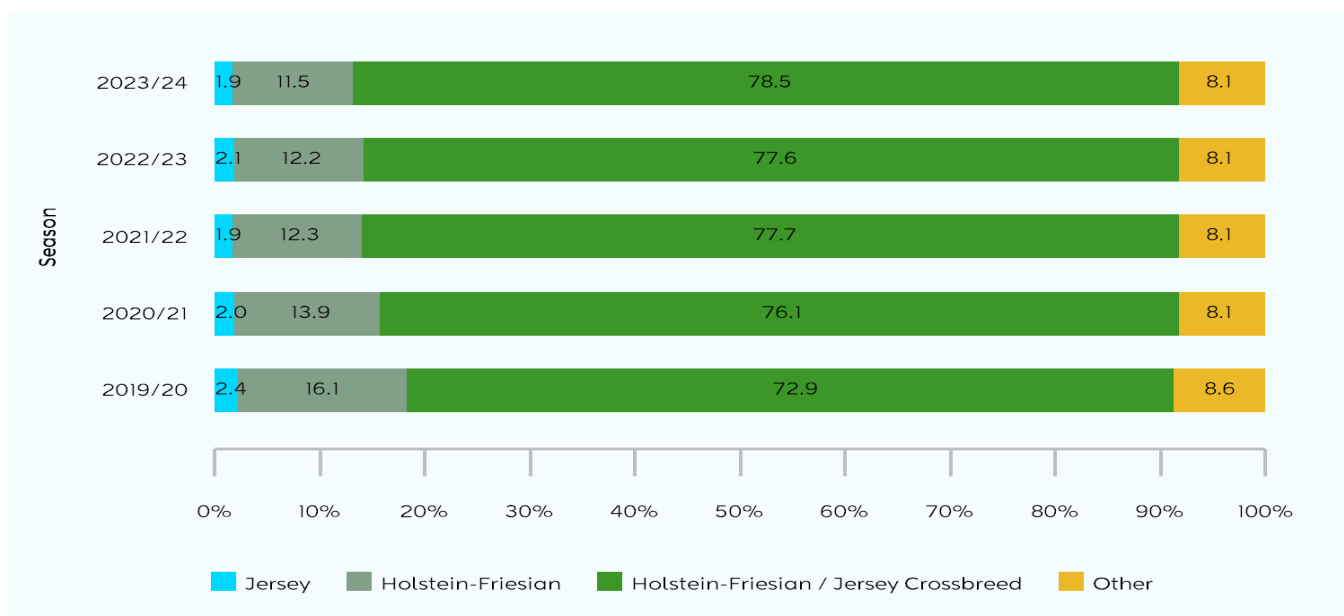


The use of Ayrshire, Holstein-Friesian and Jersey semen over different cow breeds in the past five seasons is shown in Graphs 4.6, 4.7, 4.8 and 4.9. In 2023/24, Ayrshire semen was predominantly used over Holstein-Friesian/Jersey Crossbred cows (45.2%) and Holstein-Friesian cows (16.8%) as shown in Graph 4.6. Holstein-Friesian/Jersey Crossbred semen was predominantly used over Holstein-Friesian/Jersey crosses (Graph 4.7). Jersey semen was predominately used over Holstein-Friesian/Jersey Crossbred cows (44.5%) and Jersey cows (41.5%), as illustrated in Graph 4.8. The use of Holstein-Friesian semen remains predominately over Holstein-Friesian/Jersey Crossbred cows (53.8%), followed by Holstein-Friesian cows (38.5%) (Graph 4.9).

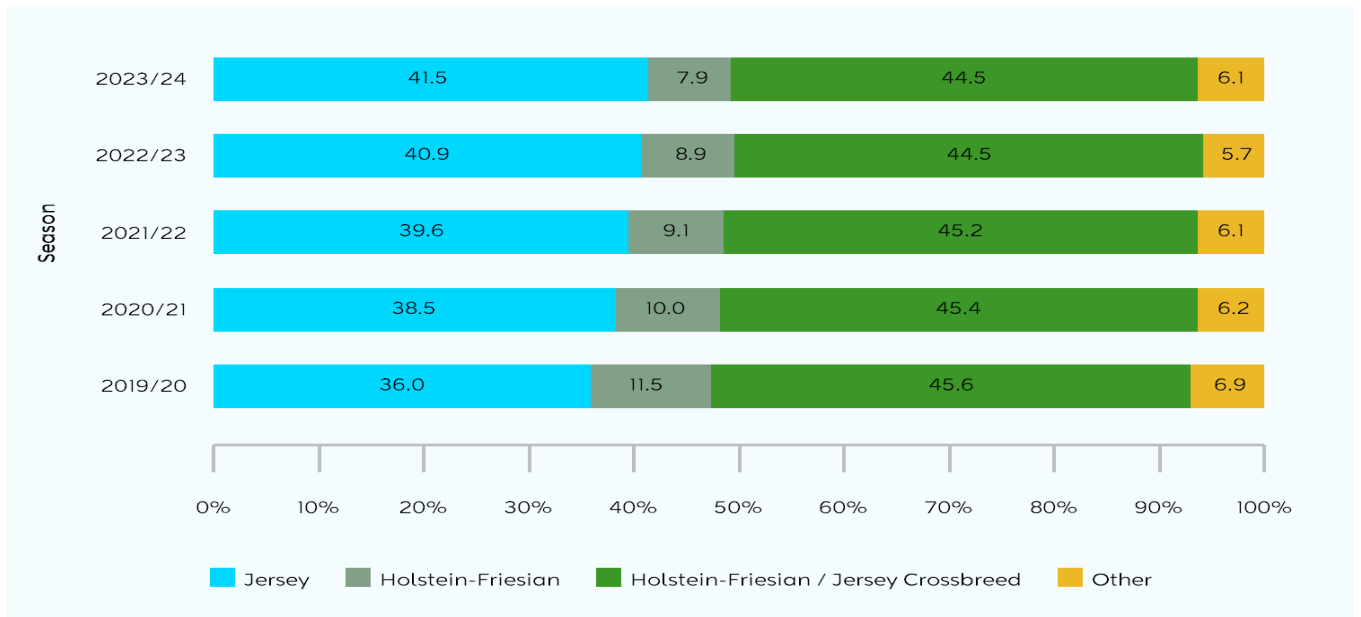
Graph 4.6: Ayrshire semen usage (%) over breed category



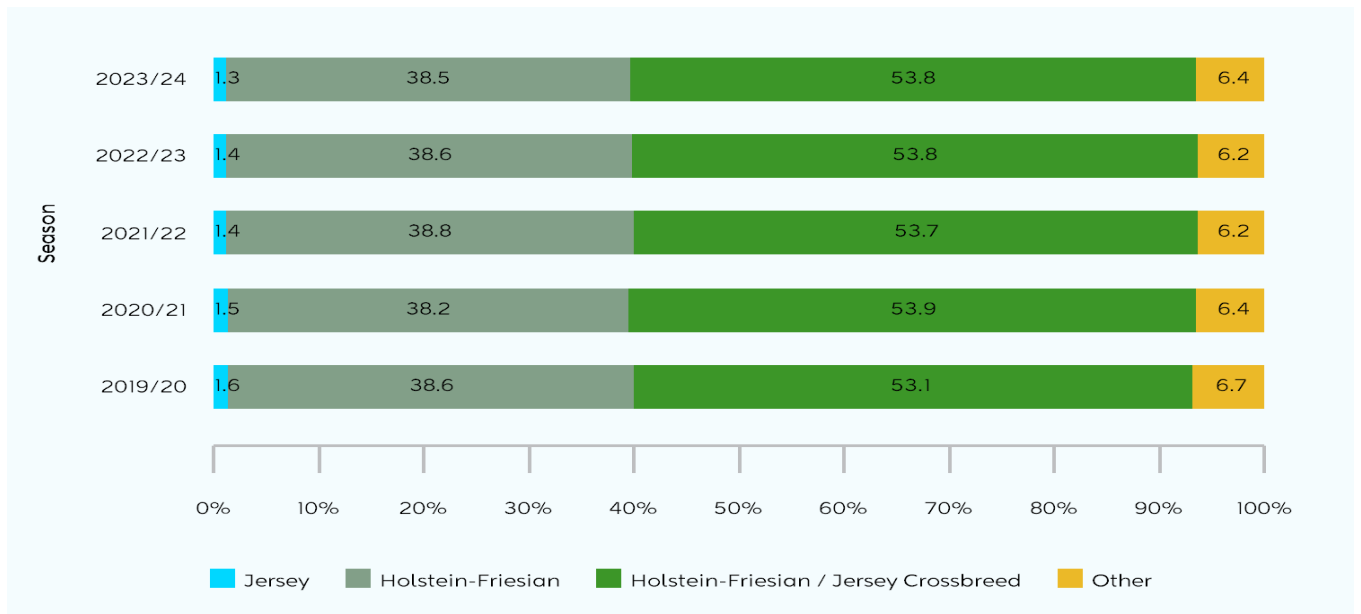
Graph 4.7: Holstein-Friesian / Jersey Crossbred semen usage (%) over breed category



Graph 4.8: Jersey semen usage (%) over breed category

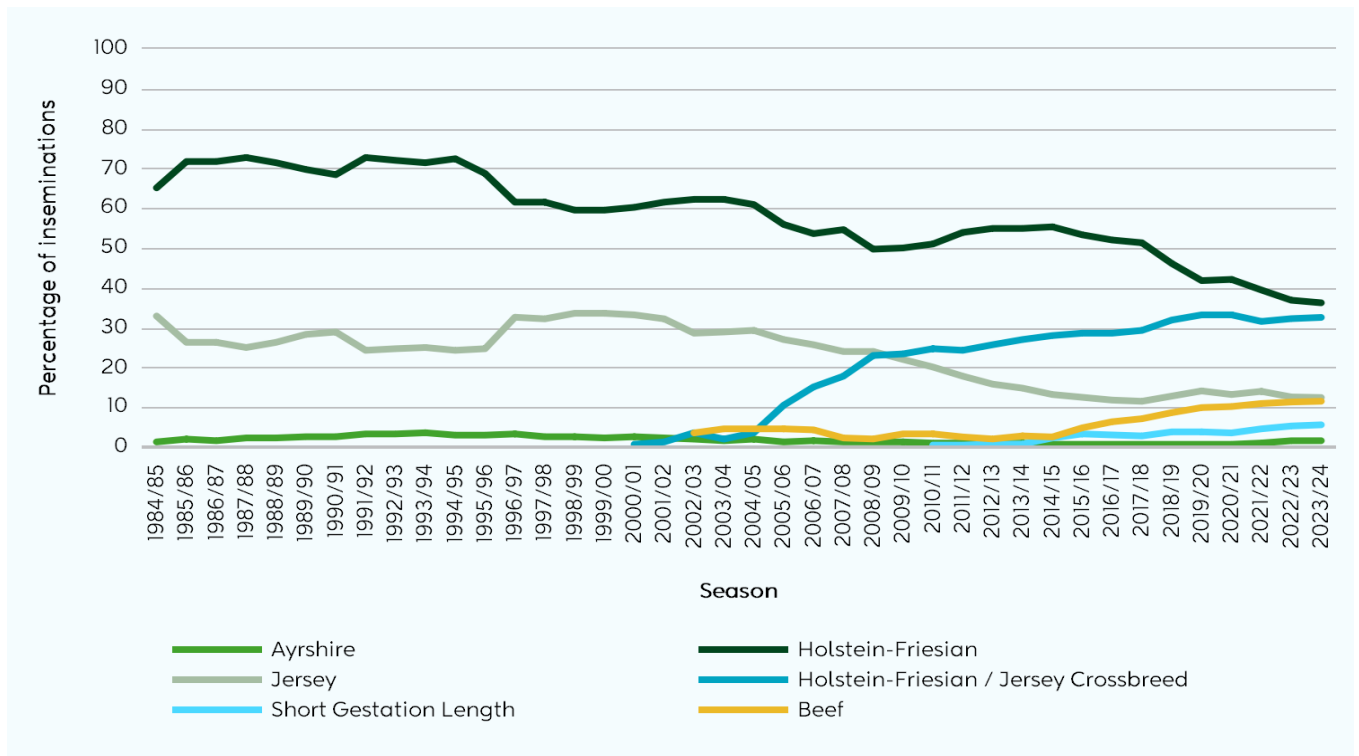


Graph 4.9: Holstein-Friesian semen usage (%) over breed category



The percentage of inseminations across the main breed categories (Holstein-Friesian, Jersey, Holstein-Friesian/Jersey Crossbred, Ayrshire, beef) and Short Gestation Length (SGL), as recorded in DIGAD, is shown in Graph 4.10. In 2023/24, the percentage of inseminations for Jersey and Holstein-Friesian cows decreased slightly, while the percentage of inseminations for Ayrshire, Holstein-Friesian/Jersey Crossbreeds, SGL, and beef slightly increased.

Graph 4.10: Trend in the percentage of inseminations of each breed category



## 4.4. Herd Reproduction

- 2023/24 was the highest year on record.

The statistics in this section are based on LIC MINDA® recording herds that contributed data for the Detailed and Intermediate Fertility Focus Reports.

Reproductive performance is a key determinant of farm productivity. The 6-week in-calf rate is one of the measures of herd reproductive performance and is used to compare performance between herds and to monitor national performance.

The not-in-calf rate at the end of mating is important at a herd level but is not suitable for comparison between herds due to differences in the length of mating period.

The actual 6-week in-calf rate, reported in the Detailed Fertility Focus Report, is calculated for herds with adequate records of early-age pregnancy tests (at least 80% of cows in the herd pregnancy tested, and at least 80% of all pregnancy test results are less than or equal to 122 days pregnant, or non-pregnant).

The estimated 6-week in-calf rate, reported in the Intermediate Fertility Focus Report, is calculated from calving and mating data for herds without sufficient early-age pregnancy test records.

Conception rates are reported in the Detailed Fertility Focus Report, but they are not available in Intermediate Fertility Focus Reports.

Since the launch of the DairyNZ InCalf programme in 2008/09, there has been a trend towards more early-aged pregnancy testing, resulting in an increase in the actual results available from Detailed Fertility Focus Reports. The number of herds with detailed reports has steadily increased from 354 in 2008/09 to 4,700 in 2023/24 (Table 4.9).

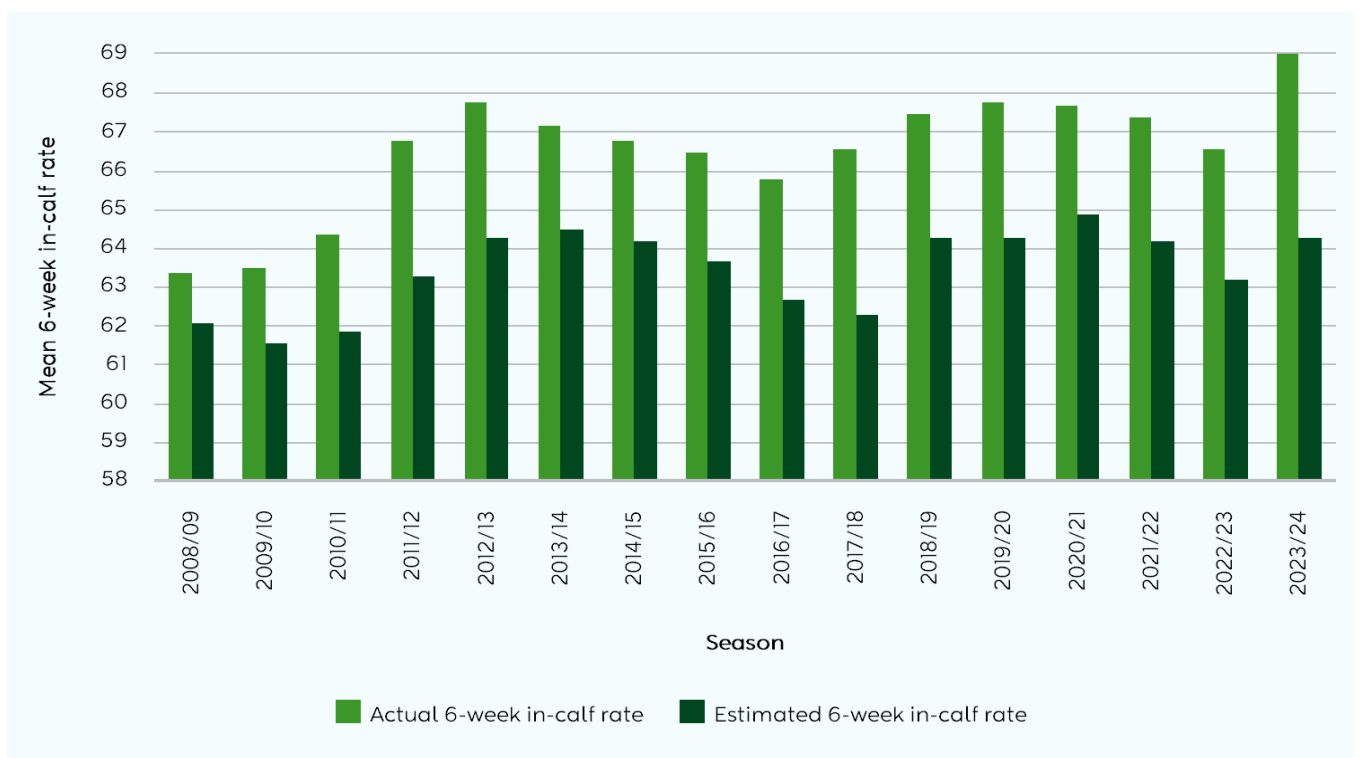
In 2023/24, the actual mean 6-week in-calf rate reached 69.3%, making it the highest on record. The estimated mean 6-week in-calf rates follow a similar trend but are between 2 and 5 percentage points lower than the actual mean 6-week in-calf rate (Graph 4.11). The actual mean 3-week submission rate increased from 77.6% in 2022/23 to 79.0% in 2023/24. However, the 2023/24 value is still lower than the 5-year average of 79.7% (Table 4.9). In 2023/24, the mean conception rate (53.2%) was higher than the previous three seasons.

Table 4.9: Trend in mean herd reproductive performance

Mating season	Actual				Estimated		
	Number of herds	Mean 6-week in-calf rate (%)	Mean 3-week submission rate	Mean conception rate (%)	Number of herds	Mean 6-week in-calf rate (%)	Mean 3-week submission rate (%)
2008/09	354	63.4	78.5	50.1	4,872	62.1	72.7
2009/10	712	63.5	77.5	51.0	4,749	61.6	72.2
2010/11	982	64.4	78.7	50.7	4,090	61.9	72.6
2011/12	1,341	66.8	80.7	52.2	4,051	63.3	76.0
2012/13	1,862	67.8	81.6	52.9	4,034	64.3	76.6
2013/14	2,363	67.2	80.8	52.5	3,874	64.5	76.5
2014/15	2,895	66.8	81.1	52.6	3,918	64.2	76.2
2015/16	3,646	66.5	80.0	52.4	4,778	63.7	75.0
2016/17	3,952	65.8	78.1	53.4	4,566	62.7	72.0
2017/18	3,963	66.6	79.1	54.0	4,035	62.3	73.2
2018/19	4,207	67.5	80.7	54.1	3,883	64.3	76.0
2019/20	4,430	67.8	80.2	54.2	3,624	64.3	75.7
2020/21	4,492	67.7	81.3	52.7	3,527	64.9	76.4
2021/22	4,671	67.4	80.4	51.8	3,208	64.2	75.9
2022/23	4,607	66.6	77.6	50.9	3,087	63.2	73.9
2023/24	4,700	69.3	79.0	53.2	2,854	64.3	76.2

Note: Results for 2008/09 and 2009/10 are based on version 1.0 of the Fertility Focus Report software. Results for 2010/11 until 2015/16 are from version 2.15 and results for 2016/17 onwards are from version 3.01. These updated versions had improvements made to calculations and reflect more correctly what the national performance is.

Graph 4.11: Trend in mean actual and estimated 6-week in-calf rate



Note: Results for 2008/09 and 2009/10 are based on version 1.0 of the Fertility Focus Report software. Results for 2010/11 until 2015/16 are from version 2.15 and results for 2016/17 onwards are from version 3.01. Each update in these versions has improved calculations to reflect national performance better.

Across regions, the actual mean 6-week in-calf rate varied between 65.9% (Northland/Auckland) and 71.2% (West Coast/Nelson/Marlborough) in 2023/24 (Table 4.10). The range in actual mean 6-week in-calf rate in 2023/24 (5.3 percentage points) was slightly higher than in 2022-23 (4.4 percentage points). The actual mean 6-week in-calf rate increased slightly in all regions compared to the previous season.

Table 4.10: Mean 6-week in-calf rate by farming region

Region	Actual						Estimated					
	2021/22		2022/23		2023/24		2021/22		2022/23		2023/24	
	Number of herds	Mean 6-week in-calf rate (%)	Number of herds	Mean 6-week in-calf rate (%)	Number of herds	Mean 6-week in-calf rate (%)	Number of herds	Mean 6-week in-calf rate (%)	Number of herds	Mean 6-week in-calf rate (%)	Number of herds	Mean 6-week in-calf rate (%)
Northland / Auckland	239	66.7	210	64.5	221	65.9	329	62.0	321	61.4	293	61.6
Waikato / Western Uplands	1,233	68.1	1,173	65.8	1,228	69.2	1,006	64.6	1,009	63.4	905	64.1
BoP / Central Plateau / East Coast	400	66.1	373	66.0	389	68.1	300	64.4	287	63.0	247	63.8
Taranaki	412	68.7	423	67.0	427	70.2	780	65.7	733	64.0	711	65.8
Hawkes Bay / Manawatu / Wairarapa	352	64.5	356	64.0	355	66.6	252	62.4	228	62.2	223	62.7
West Coast / Nelson / Marlborough	182	66.8	196	68.4	208	71.2	232	63.4	220	63.7	194	65.6
North & South Canterbury	878	67.8	888	67.6	908	70.2	129	63.8	115	63.6	105	64.8
Otago / Southland	975	67.7	988	67.5	964	70.1	180	63.5	174	63.3	176	65.3

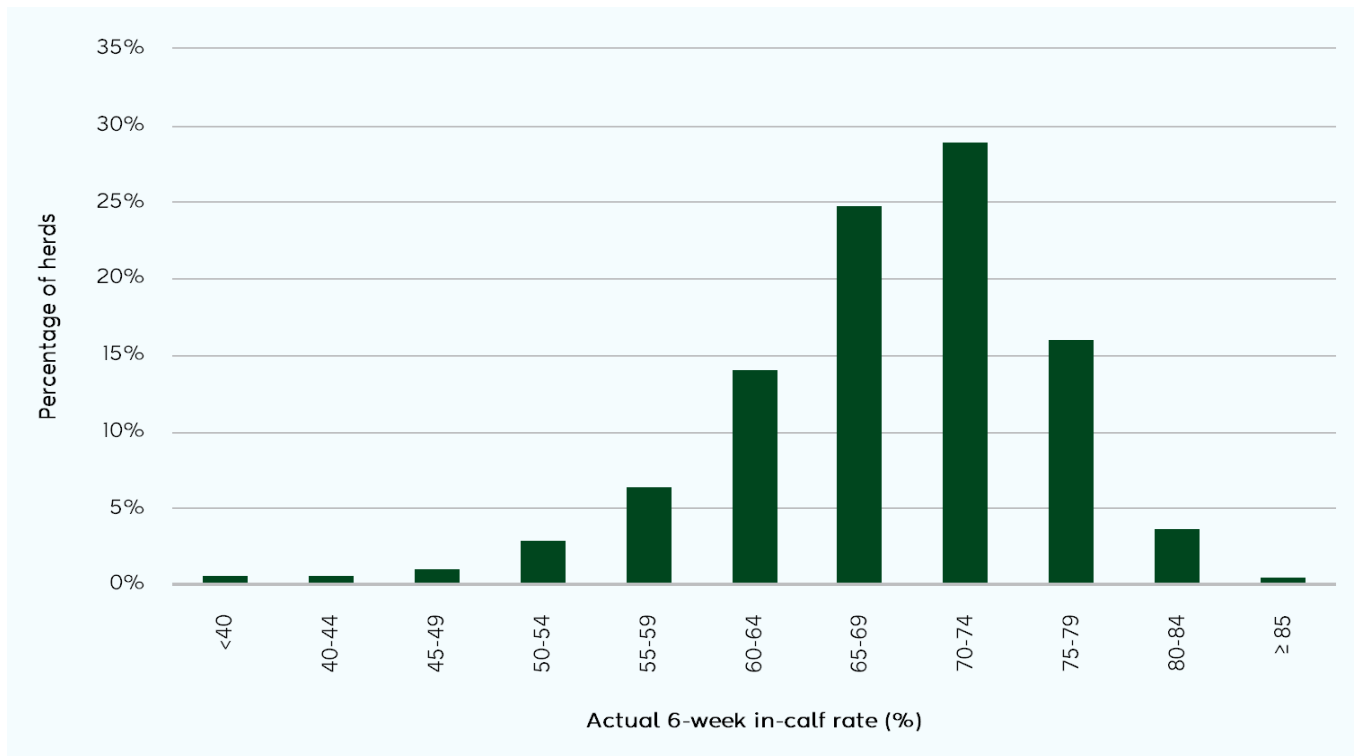
Note: Since 2020/21, the results reported in this table are from an improved version of the Fertility Focus Report software and will differ from earlier publications.

The distribution of actual 6-week in-calf rates is shown in Table 4.11 and Graph 4.12. In 2023/24, 50% of herds had an actual 6-week in-calf rate of 70% or higher and 10% had an in-calf rate of 78% or higher (Table 4.11). Ten percent of herds had a 6-week-in-calf rate of 59.9% or lower. Ninety percent of herds had a mean actual 6-week in-calf rate between 55% and 79% (Graph 4.12).

Table 4.11: Actual 6-week in-calf rate in 2023/24

	Number of herds	Median	Top 10%	Top 25%	Bottom 25%	Bottom 10%
6-week in-calf rate	4,700	70	> 78	> 75	< 65	< 59.9

Graph 4.12: Distribution of actual 6-week in-calf rate in 2023/24

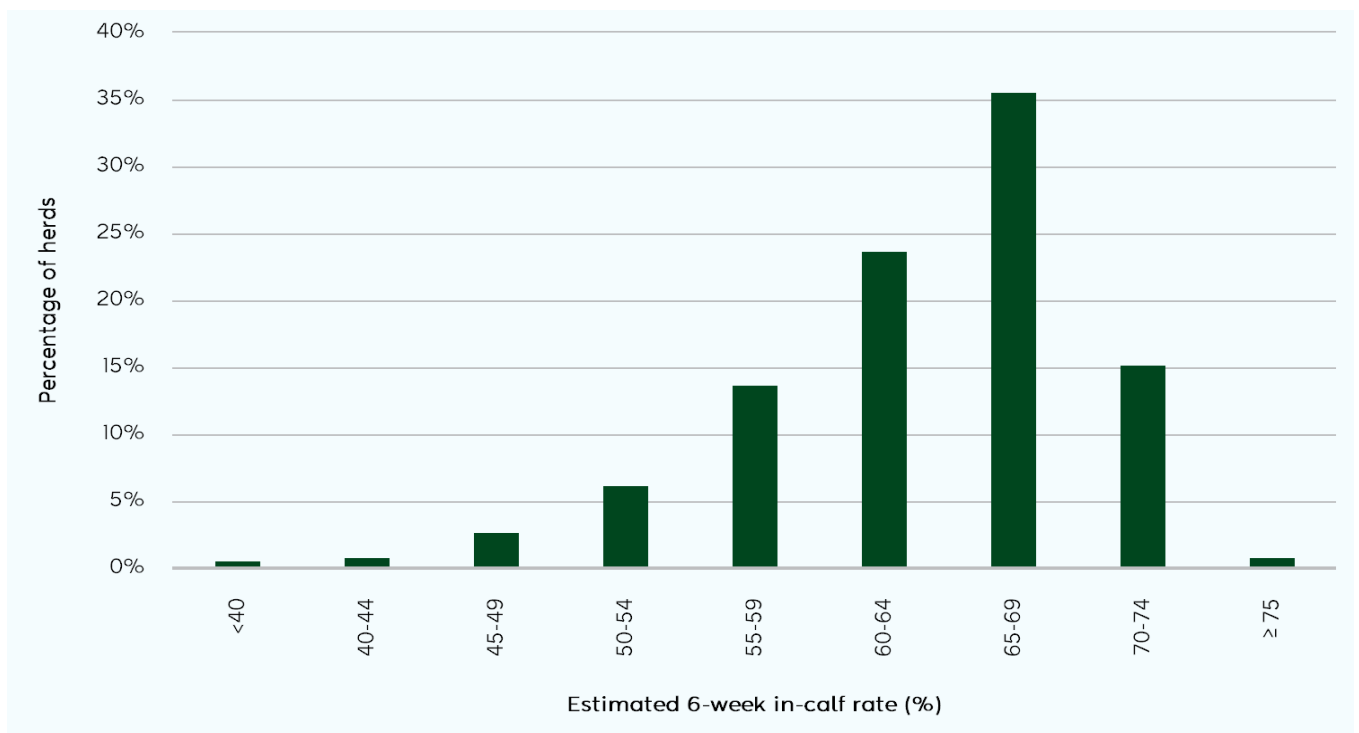


In 2023/24, 50% of herds achieved an estimated 6-week in-calf rate of 66% or higher, with 10% of herds reaching 72% or higher (Table 4.12). Conversely, 10% of herds had an in-calf rate of 55% or lower. Approximately 60% of herds fell within an estimated 6-week in-calf rate range of 60% to 69% (Graph 4.13).

Table 4.12: Estimated 6-week in-calf rate in 2023/24

	Number of herds	Median	Top 10%	Top 25%	Bottom 25%	Bottom 10%
6-week in-calf rate	2,854	66	> 72	> 69	< 61	< 55

Graph 4.13: Distribution of estimated 6-week in-calf rate in 2023/24



## 4.5. Calving

### 4.5.1. Planned start of calving and median calving dates

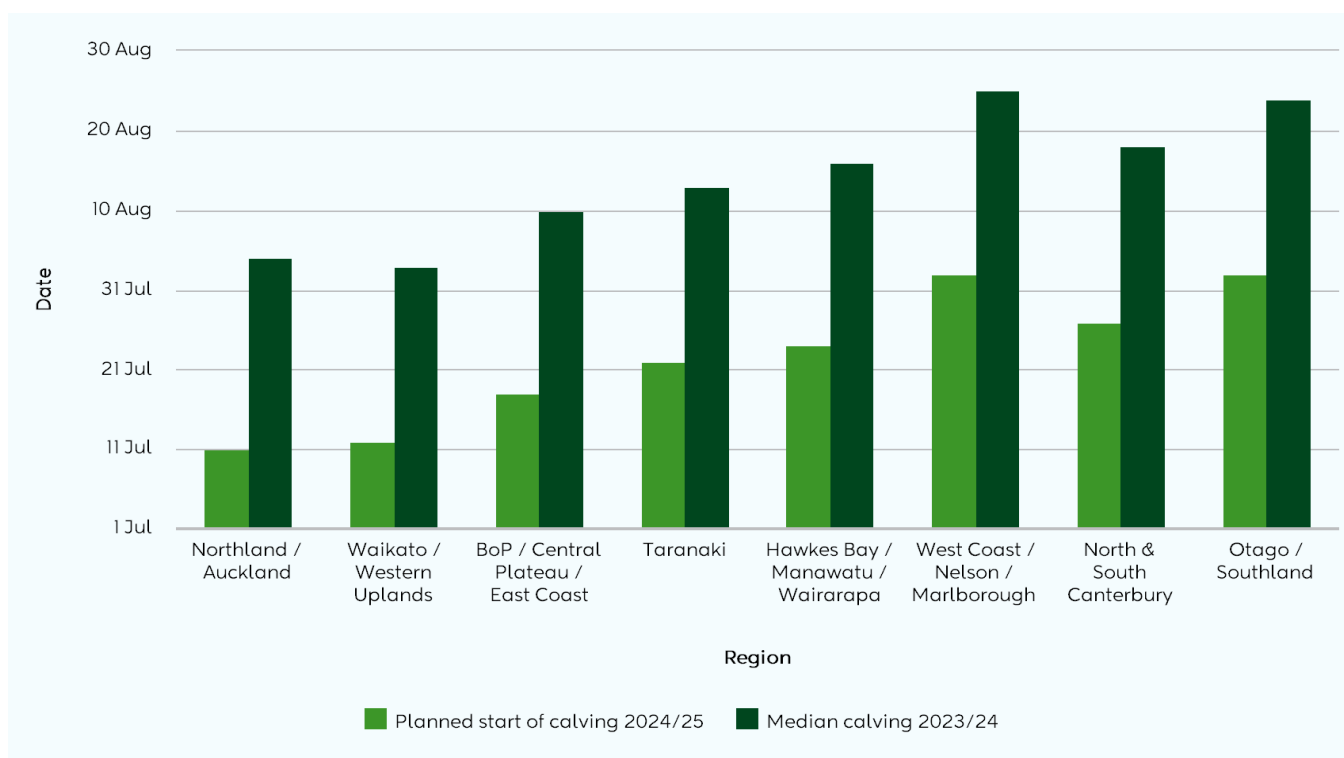
The trend in calving dates within and between regions is best shown by the “planned start of calving” date. The planned start of calving date is 279 days from the date that mating is started in a herd. A farmer has control over, and the ability to change, the start of mating.

Historically, the mating and calving information was sourced from the LIC Herd Improvement Database (approximately 80-85% of all herds). This data was used to produce graphs 4.14-4.15 until 2020/21. Since the 2021/22 season, the data for these graphs is sourced from the Dairy Industry Good Animal Database (DIGAD).

The median calving date (the date that occupies the middle position after the dates are arranged in ascending order) is used as an indicator of actual calving spread.

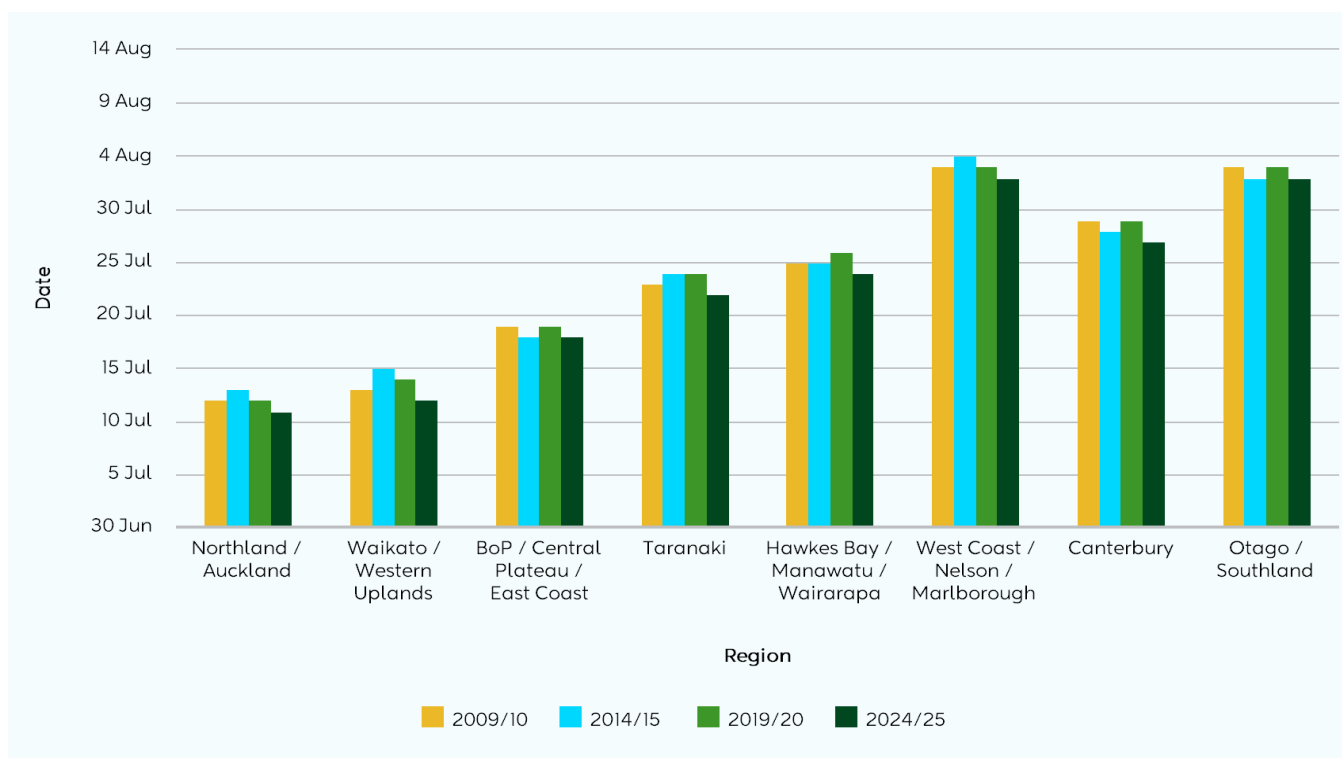
The planned start of calving is forecasted for the 2024/25 season and the actual median calving dates for cows in the 2023/24 season (excluding first calvers) are shown in Graph 4.14. In the North Island, the median calving date in 2023/24 was between August 3 and August 16, while in the South Island, it was between August 18 and August 25 (Graph 4.14).

Graph 4.14: Planned start of calving and median calving dates for cows (excluding first calvers) by region



The planned start of calving for five-yearly intervals since 2009/10 is shown in Graph 4.15. Overall, the trend is toward an earlier planned start of calving with the planned start of calving in 2024/25 being particularly earlier than it was five, ten and fifteen years ago (Graph 4.15).

Graph 4.15: Trend in planned start of calving dates for cows (excluding first calvers) by region



## 4.5.2. Calving interval

The calving interval for a cow is defined as the number of days between her calving date in the current season and her calving date in the previous season. First-calving heifers do not have a calving interval calculated. The average calving interval is estimated using all recorded calving dates for cows that calve between June 1 and November 30. Records where pregnancy was terminated are excluded from this calculation.

Table 4.13: Trend in mean calving interval by breed

Season	All breeds		Holstein-Friesian		Jersey		Friesian/Jersey Cross		Ayrshire	
	Average number of days	Number of records	Average number of days	Number of records	Average number of days	Number of records	Average number of days	Number of records	Average number of days	Number of records
2003/04	369.0	2,181,103	369.4	1,067,677	368.2	375,598	368.6	620,523	368.9	23,642
2004/05	369.5	2,210,747	370.1	1,040,243	368.8	383,759	369.0	666,562	370.6	23,169
2005/06	367.8	2,241,175	368.2	1,013,546	367.7	390,971	367.4	706,441	368.2	23,129
2006/07	368.9	2,260,512	369.3	1,002,099	369.0	387,357	368.2	739,493	370.4	22,785
2007/08	369.9	2,349,042	370.4	985,422	369.7	366,954	369.5	853,422	371.0	21,239
2008/09	370.1	2,359,392	371.0	953,577	368.9	359,509	369.5	891,949	371.9	19,948
2009/10	368.7	2,477,122	369.1	972,118	368.3	361,329	368.5	980,435	369.3	16,745
2010/11	368.6	2,628,672	369.2	1,000,637	368.2	364,664	368.2	1,088,976	370.5	19,719
2011/12	368.3	2,807,333	368.5	1,030,006	368.0	370,877	368.2	1,213,169	369.1	20,164
2012/13	368.8	2,927,817	368.7	1,323,053	368.4	370,796	368.7	1,323,053	369.5	20,643
2013/14	368.4	3,054,915	368.8	1,051,940	368.2	366,500	368.2	1,427,255	369.8	20,337
2014/15	368.4	3,087,517	368.9	1,037,413	367.8	350,376	368.1	1,478,464	368.9	18,949
2015/16	369.5	3,063,466	370.0	1,002,362	368.5	327,521	369.4	1,515,761	370.0	17,358
2016/17	370.9	3,102,833	371.6	1,010,574	370.3	310,334	370.7	1,553,638	370.8	16,162
2017/18	368.6	3,088,021	369.3	1,011,453	367.8	293,988	368.4	1,557,077	369.9	15,086
2018/19	368.9	3,092,199	369.4	935,436	368.5	274,187	368.9	1,653,697	369.5	14,178
2019/20	369.0	3,085,761	369.3	753,923	368.3	247,196	369.0	1,866,661	369.2	13,276



Season	All breeds		Holstein-Friesian		Jersey		Friesian/Jersey Cross		Ayrshire	
	Average number of days	Number of records	Average number of days	Number of records	Average number of days	Number of records	Average number of days	Number of records	Average number of days	Number of records
2020/21	369.4	3,038,733	369.8	716,265	368.9	235,352	369.3	1,853,430	369.3	11,988
2021/22	369.2	2,986,978	369.6	679,394	369.0	227,480	369.2	1,850,683	370.1	11,238
2022/23	369.0	2,940,868	369.4	646,732	368.5	222,433	368.9	1,835,419	370.9	10,619

## 4.6. Animal Evaluation

The genetic merit of New Zealand dairy cows and sires is estimated using a statistical model that evaluates animals from different breeds simultaneously, taking into account recorded genetic relationships. Given the significant presence of crossbred cows and mixed-breed herds within the national herd, the evaluation system is specifically designed to compare animals across breeds, both nationally and within herds. This approach helps farmers identify and select the most profitable animals to enhance future herd performance.

There are two types of evaluations calculated for New Zealand dairy animals:

1. **Trait evaluations:** These are estimates of an animal's genetic merit (Breeding Values) for individual traits including milkfat, protein, volume, liveweight, somatic cell, fertility, gestation length, body condition score, functional survival and udder overall. There are also estimates of an animal's lifetime productive ability (Production Values) for milkfat, protein, volume, somatic cell and liveweight.
2. **Economic evaluations:** These combine an animal's individual trait evaluations to estimate its comparative ability to convert feed into profit, through breeding replacements (Breeding Worth) and lifetime production (Production Worth).

For each economic index, Economic Values are calculated for the relevant traits. For Breeding Worth, the Economic Values represent the net income per unit of feed from breeding replacements with a one-unit genetic improvement in the trait. For Production Worth, the Economic Values represent the net income per unit of feed from milking cows with a one unit improved productive ability in the trait. In each case the base unit of feed is five tonnes of dry matter in average quality pasture.

The profit-related traits are combined into a single economic index. For example,

$$\begin{aligned}
 \text{Breeding Worth} = & \text{Milkfat BV} \quad \times \quad \$\text{EV (Milkfat)} \quad + \\
 & \text{Protein BV} \quad \times \quad \$\text{EV (Protein)} \quad + \\
 & \text{Milk BV} \quad \times \quad \$\text{EV (Milk)} \quad + \\
 & \text{Liveweight BV} \quad \times \quad \$\text{EV (Liveweight)} \quad + \\
 & \text{Somatic Cell BV} \quad \times \quad \$\text{EV (Somatic Cell)} \quad + \\
 & \text{Fertility BV} \quad \times \quad \$\text{EV (Fertility)} \quad + \\
 & \text{Gestation Length BV} \quad \times \quad \$\text{EV (Gestation Length)} \quad + \\
 & \text{Body Cond. Score BV} \quad \times \quad \$\text{EV (Body Cond. Score)} \quad + \\
 & \text{Functional Survival BV} \quad \times \quad \$\text{EV (Functional Survival)} \quad + \\
 & \text{Udder Overall BV} \quad \times \quad \$\text{EV (Udder Overall)}
 \end{aligned}$$

where: BV = Breeding Value for each trait, \$EV = economic value for each trait for breeding replacements

Production Worth is calculated using Production Values for the 3 production traits, somatic cell and liveweight, multiplied by the respective economic values.

Animal Evaluation provides a tool for ranking animals in terms of their expected profit per unit of feed consumed. The economic values are presented below for 2024 (Table 4.14). The economic values are reviewed annually and therefore may change from year to year. The timing of this update has historically occurred in February, but two season ago New Zealand Animal Evaluation Limited (NZAEL) made the decision to align any major Animal Evaluation updates with the Interbull (international) evaluation schedule, this includes updates to economic values.

Table 4.14: Economic values used from 17 May 2024

Key performance indicator	Milkfat (\$/kg)	Protein (\$/kg)	Milk (\$/kg)	Liveweight (\$/kg)	Somatic Cell (\$/score)	Fertility (\$/CR42)	Gestation Length (\$/day)	Body Cond. Score (\$/score)	Udder Overall (\$/unit)	Functional Survival (\$/%)
Breeding Worth	4.85	6.83	-0.1	-1.59	-46.21	5.77	-1.89	164.1	a	1.88
Production Worth	4.74	7.70	-0.103	-1.69	-42.42	-	-	-	-	-

Note:

a Udder overall (\$/unit) has a non-linear economic value of  $62.942 \times \text{BV} + -31.409 \times \text{BV}^2$ .

The information for all Animal Evaluation statistics was sourced from cows and sires in DIGAD as of 17th May 2024. The evaluations were conducted with reference to a genetic base of cows born in 2005. The genetic base (also known as the base cow), refers to a group of cows from a specific year whose BW is used as the reference point zero, with the BW of all other animals reported relative to this group. For more information on economic values, follow these links - [www.dairynz.co.nz/animal/animal-evaluation/interpreting-the-info/economic-values](http://www.dairynz.co.nz/animal/animal-evaluation/interpreting-the-info/economic-values) and [www.lic.co.nz/about/animal-evaluation](http://www.lic.co.nz/about/animal-evaluation).

### 4.6.1. Sire Evaluations

The Breeding Values (BV) and Breeding Worth (BW) by breed for all bulls born in 2019, which were first proven in the 2023/24 season and have a BW Reliability of 70% or greater are shown in Table 4.15. BW Reliability is measured on a scale from 0% to 99%. A value 0% indicates that there are no performance records for any related animal used in the bull's evaluation, while a value of 99% indicates that the bull has a large number of performance-recorded daughters.

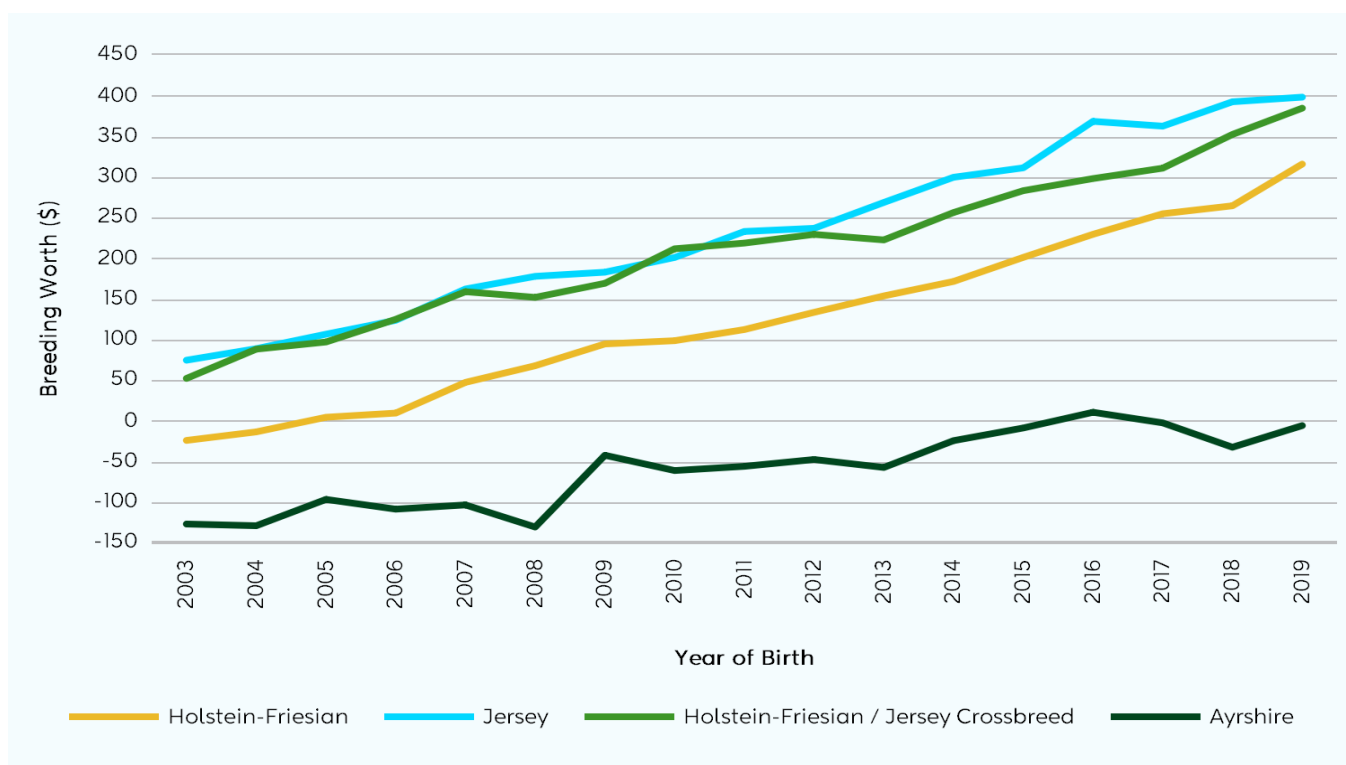
Table 4.15: Average Breeding Values and Breeding Worth of 2019 born bulls (BW reliability of 70% or greater)

Breed category	Milk Fat BV	Protein BV	Milk Volume BV	Liveweight BV	Somatic Cell BV	Fertility BV	Gestation Length BV	Body Condition Score BV	Functional Survival BV	Udder Overall BV	Breeding Worth	Number of Bulls
Jersey	32.5	13.2	-225.6	-41.5	-0.23	4.0	-0.991	0.02	1.9	0.434	398.0	75
Holstein-Friesian	39.5	39.4	887.8	45.7	0.05	-0.9	-3.236	-0.01	2.0	0.437	315.6	130
Holstein-Friesian / Jersey Crossbreed	40.0	30.4	382.4	10.6	-0.03	1.4	-3.333	0.02	1.8	0.417	384.4	90
Ayrshire	-2.0	9.6	235.1	40.3	-0.73	-2.2	-0.305	-0.04	1.4	0.335	-6.2	2

(Evaluation date: 17 May 2024)

The genetic trend of all proven dairy bulls is shown in Graph 4.16. Breeding worth has consistently increased over the years in Holstein-Friesian, Jersey and Holstein-Friesian/Jersey Crossbreed cows.

Graph 4.16: Genetic trend of proven dairy bulls by year of birth (BW reliability of 70% or greater)



(Evaluation date: 17 May 2024)

Young bulls are initially selected for Artificial Breeding based on the genetic merits of their sire and dam and/or genomic indices. These young sires are then progeny tested to estimate their Breeding Worth more accurately via the performance of their daughters. Each year some progeny tested bulls are returned to service for use as daughter proven sires.

The number of sires, categorised by birth year and breed, for which the BW Reliability was at least 70% is shown in Table 4.16. This table is updated annually for all age groups to include older bulls that have now been proven in New Zealand.

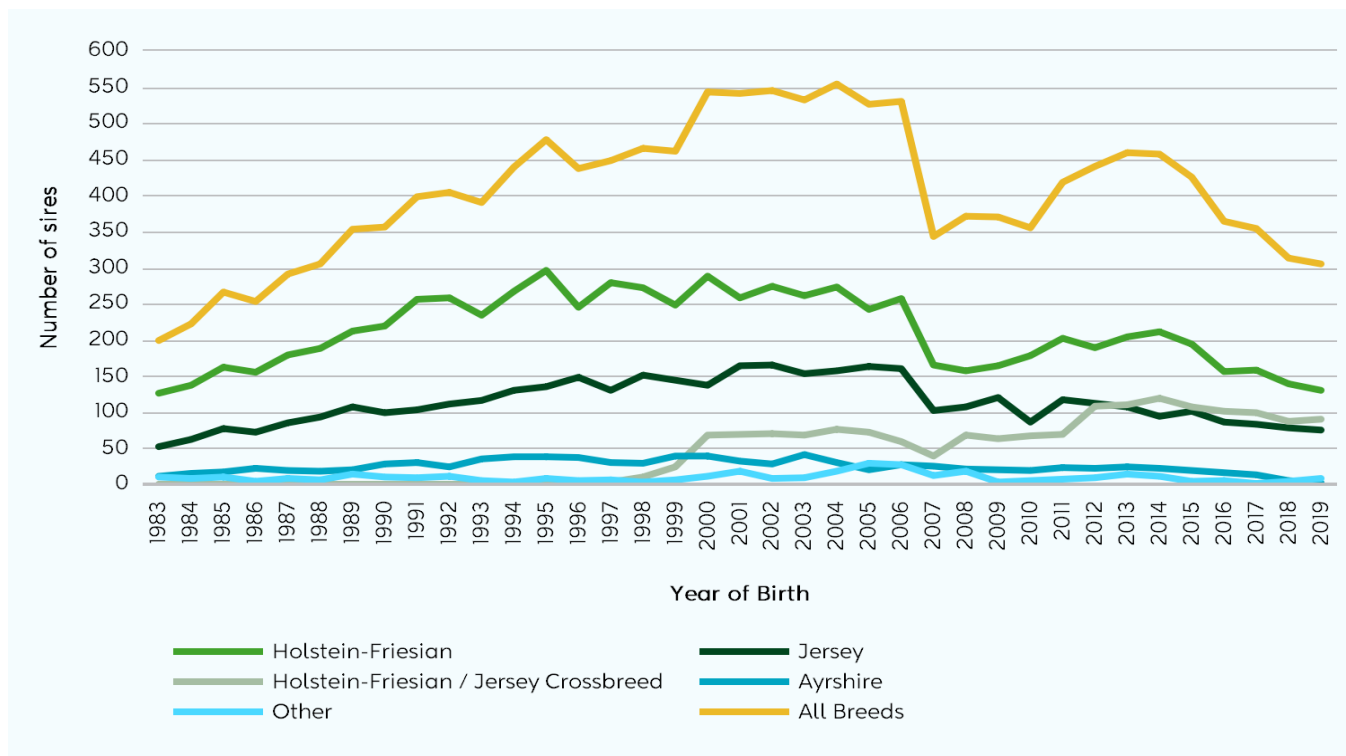
Table 4.16: Number of Sires by birth year and breed category (reliability of BW 70% or greater, includes overseas bulls)

Year of Birth	Number of Sires	Holstein-Friesian	Jersey	Holstein-Friesian / Jersey Crossbreed	Ayrshire	Other
2003	532	261	153	68	41	9
2004	554	273	157	76	30	18
2005	526	242	163	72	20	29
2006	530	257	160	59	27	27
2007	343	165	102	39	25	12
2008	371	157	107	68	21	18
2009	370	164	120	63	20	3
2010	355	178	86	67	19	5
2011	418	202	117	69	23	7
2012	440	189	112	108	22	9
2013	459	204	107	110	24	14
2014	457	211	94	119	22	11
2015	425	194	101	107	19	4
2016	364	156	86	101	16	5
2017	354	158	83	99	13	1
2018	313	139	78	87	5	4
2019	305	130	75	90	2	8
Total	7,116	3,280	1,901	1,402	349	184

(Evaluation date: 17 May 2024)

The number of Holstein-Friesians sires available for artificial breeding remains dominant (Graph 4.16a). The number of Holstein-Friesian/Jersey Crossbreeds sires available for artificial breeding has increased in recent years, reflecting a potential shift towards more hybrid vigour.

Graph 4.16a: Number of Sires by year of birth (BW reliability of 70% or greater, includes overseas bulls)



(Evaluation date: 17 May 2024)

## 4.6.2. Cow Evaluations

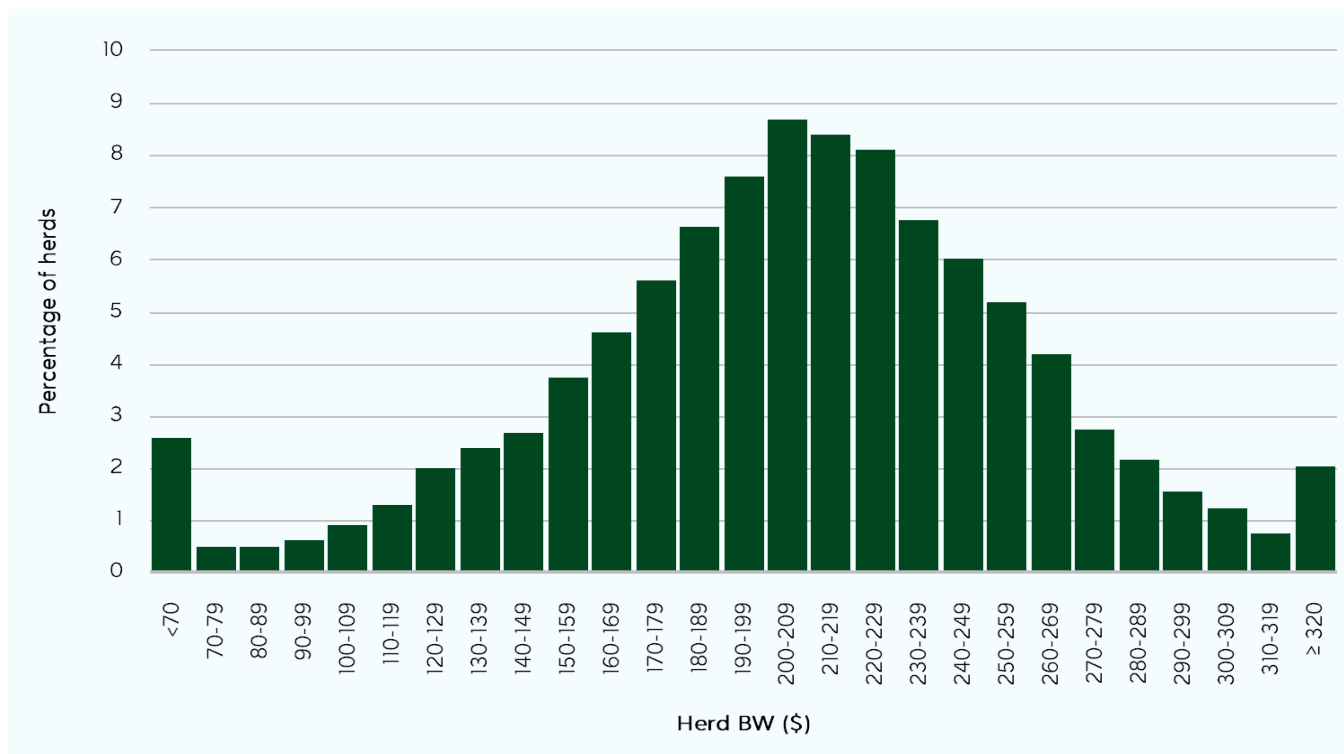
The Breeding Worth for herds presented below (Table 4.17 and Graph 4.17) is based on cows of the users of herd testing services in herds with at least 80 cows during the 2023/24 season. Of these herds, 50% had a BW of 209 or above and 25% had a BW of 241 or above, shown in Table 4.17.

Table 4.17: Herd Breeding Worth in 2023/24

	Median	Top 5%	Top 10%	Top 25%	Bottom 25%	Bottom 10%	Bottom 5%
Herd BW	209	>294	>272	>241	<175	<136	<109

(Evaluation date: 17 May 2024)

Graph 4.17: Distribution of Herd Breeding Worth in 2023/24



(Evaluation date: 17 May 2024)

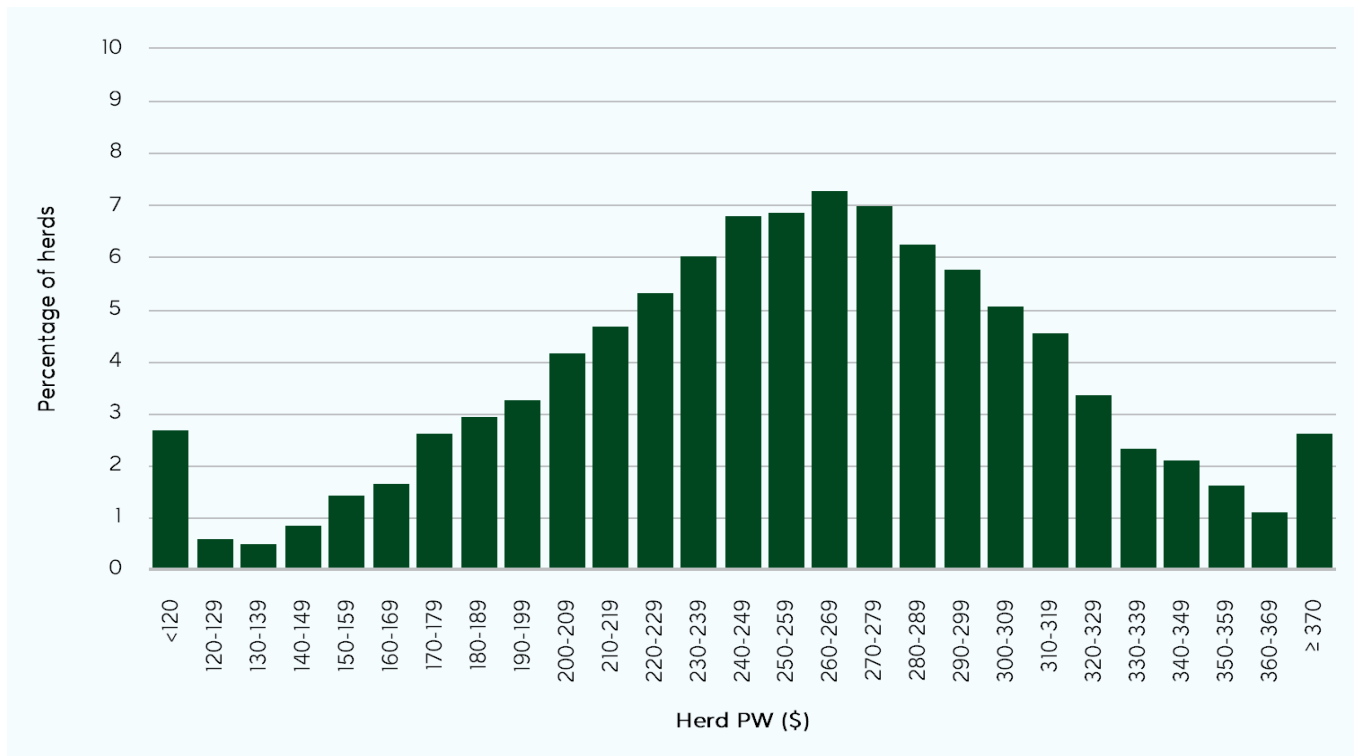
The Production Worth (PW) for cows presented below (Table 4.20 and Graph 4.20) is based on cows of herd testing farms, in herds with at least 80 cows, in the 2023/24 season. Table 4.20 shows that 50% of these cows had a PW of 260 or above and that 25% of these cows had a PW of 387 or above.

Table 4.18: Herd Production Worth in 2023/24

	Median	Top 5%	Top 10%	Top 25%	Bottom 25%	Bottom 10%	Bottom 5%
Herd PW	259	>353	>330	>296	<219	<178	<153

(Evaluation date: 17 May 2024)

Graph 4.18: Distribution of Herd Production Worth in 2023/24



(Evaluation date: 17 May 2024)

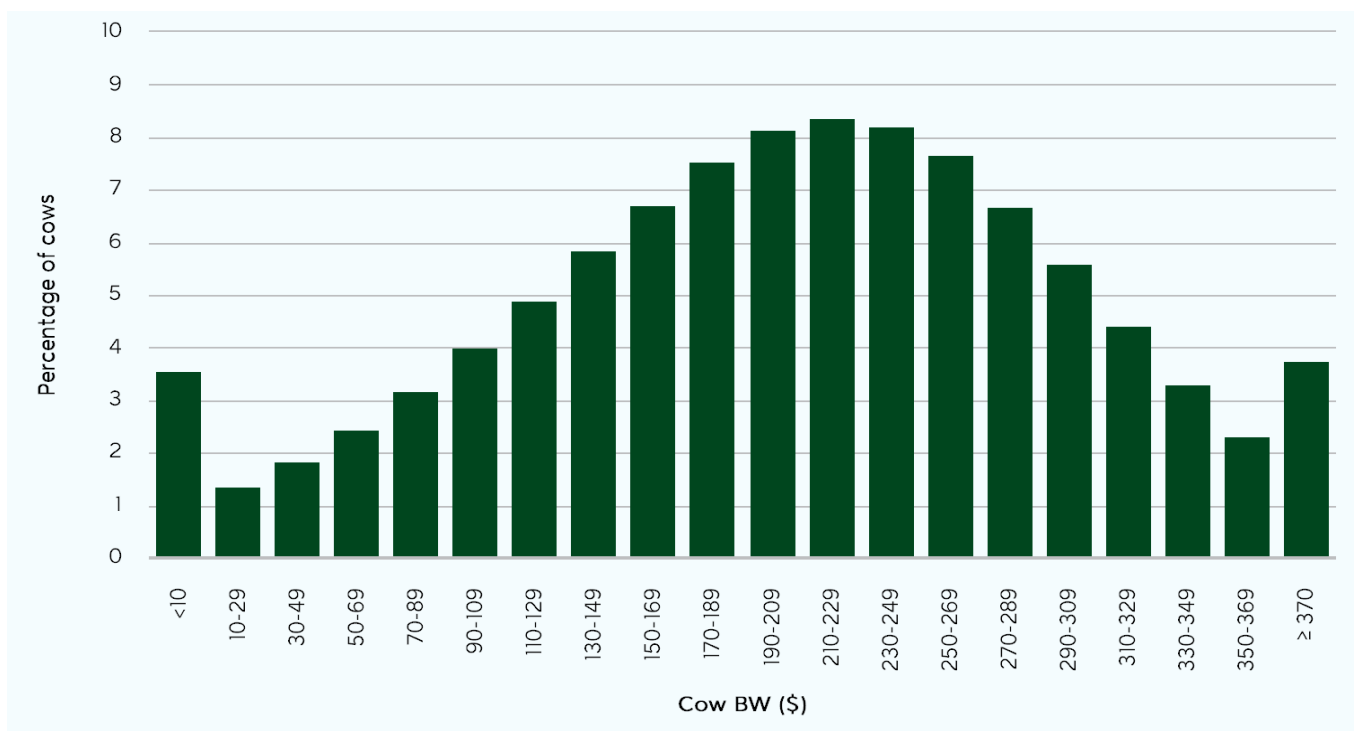
The Breeding Worth (BW) for cows presented below (Table 4.19 and Graph 4.19) is based on all cows of herd testing farms, in herds with at least 80 cows, and signed up for herd testing in the 2023/24 season. Table 4.19 shows that 50% of these cows had a BW of 211 or above and that 25% of these cows had a BW of 273 or above.

Table 4.19: Cow Breeding Worth in 2023/24

	Median	Top 5%	Top 10%	Top 25%	Bottom 25%	Bottom 10%	Bottom 5%
Cow BW	211	>358	>327	>273	<143	<75	<31

(Evaluation date: 17 May 2024)

Graph 4.19: Distribution of Cow Breeding Worth in 2023/24



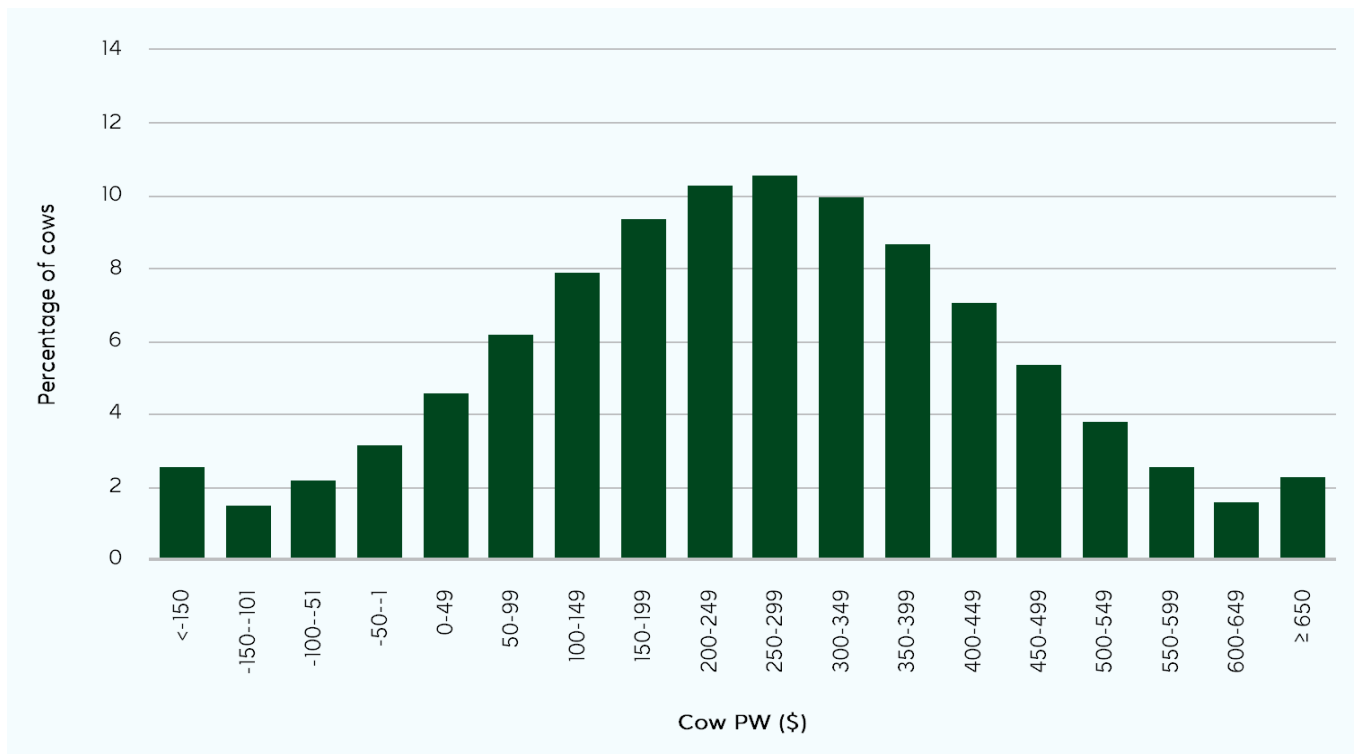
The Production Worth (PW) for cows presented below (Table 4.20 and Graph 4.20) is based on cows of herd testing farms, in herds with at least 80 cows, and signed up for herd testing in the 2023/24 season. Table 4.20 shows that 50% of these cows had a PW of 260 or above and that 25% of these cows had a PW of 387 or above.

Table 4.20: Cow Production Worth in 2023/24

	Median	Top 5%	Top 10%	Top 25%	Bottom 25%	Bottom 10%	Bottom 5%
Cow PW	260	>578	>504	>387	<131	<7	<-76

(Evaluation date: 17 May 2024)

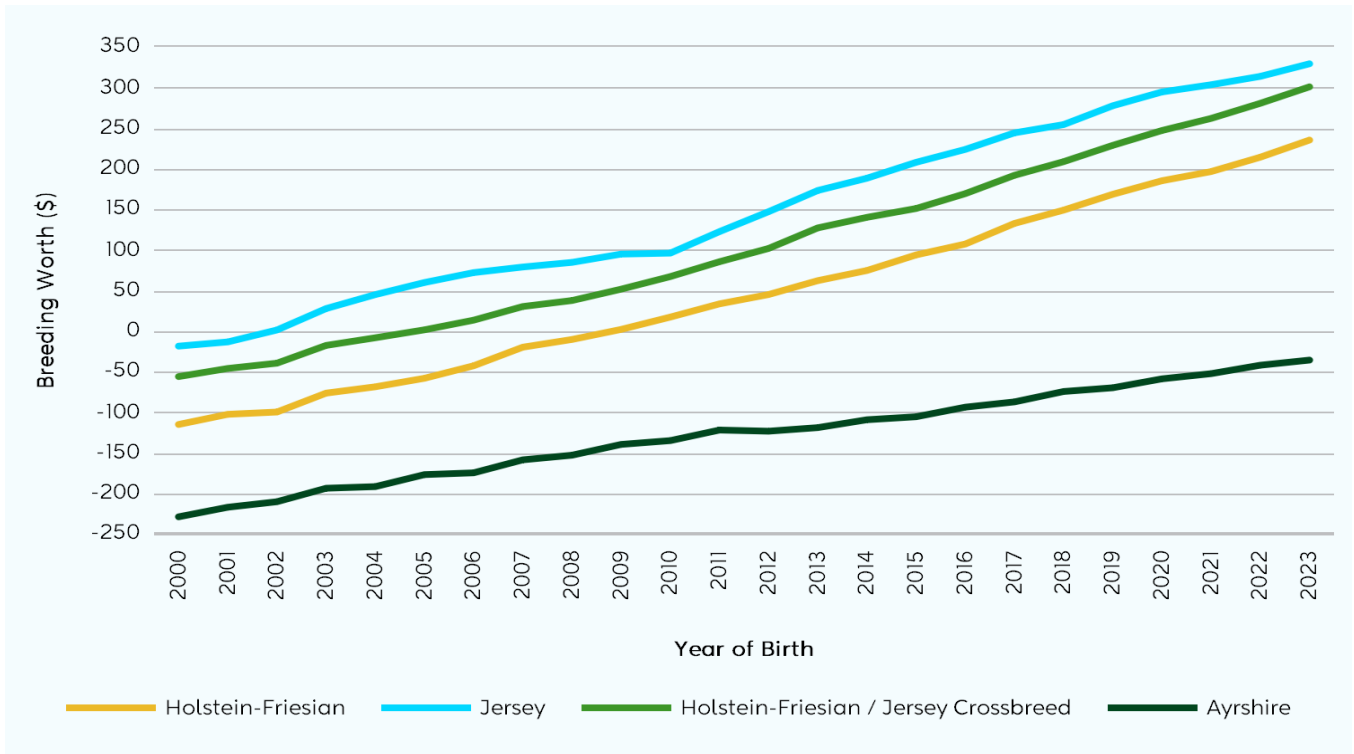
Graph 4.20: Distribution of Cow Production Worth in 2023/24



(Evaluation date: 17 May 2024)

The genetic trend for cows is based on all cows (alive or dead) recorded on the DIGAD Database as of 17 May 2024. Also included are the estimated BW and PW for replacement stock (2022 and 2023 born animals). All evaluations can be compared across breeds. The genetic trend for BW by breed is presented in Graph 4.21. Consistent with previous years, the BW for all breed categories continued to increase in the 2023/24 season, with Jersey cows, on average, having a higher BW than other breeds.

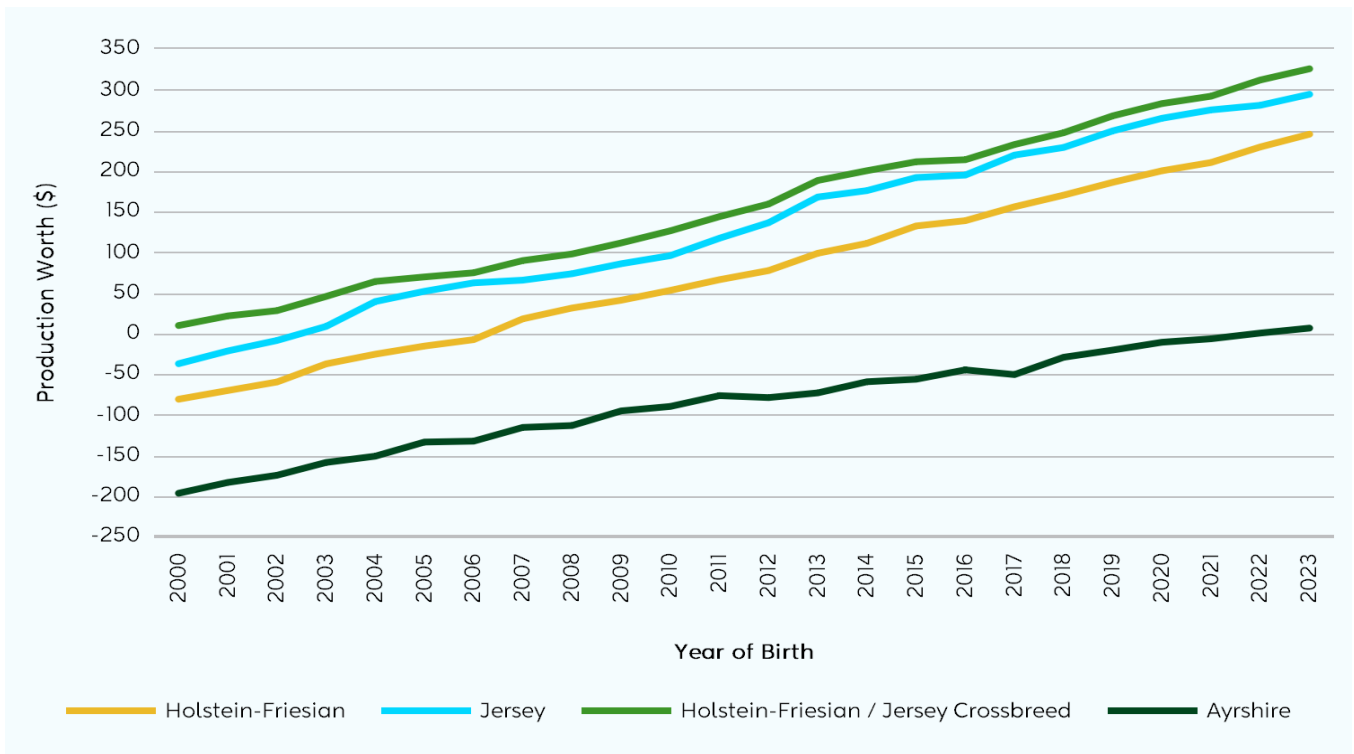
Graph 4.21: Trend in Breeding Worth for all cows



(Evaluation date: 17 May 2024)

The trend for PW by breed is presented in Graph 4.22. The increasing value of the protein component of milk has resulted in a favourable outcome for crossbred animals with the additional value of heterosis (hybrid vigour) also expressed in PW for crossbred animals.

Graph 4.22: Trend in Production Worth for all cows



(Evaluation date: 17 May 2024)

The average BVs and BW by breed category, of all current 2021 born cows are presented in Table 4.21. The Jersey cows had the highest average BW at 307. Holstein-Friesian cows had the highest protein, and milk volume BVs, and together with crossbred animals, they had the highest milkfat BVs. All evaluations are comparable across breeds.

Table 4.21: Average Breeding Worth and Breeding Values of all current cows born in 2021 by breed category

Breed	BW \$	Milkfat BV (kg)	Protein BV (kg)	Milk Volume BV (l)	Liveweight BV (kg)	Somatic Cell BV (score)	Fertility BV (%)	Gestation Length BV (days)	Body Cond. Score (score)	Functional Survival BV (%)	Udder Overall BV (unit)	Cow Numbers
Holstein-Friesian	201.4	26.3	28.0	683	43.0	0.05	-0.6	-2.5	0.01	1.4	0.357	205,120
Holstein-Friesian / Jersey Crossbreed	266.3	25.9	21.5	300	6.8	-0.02	1.6	-2.8	0.01	1.5	0.285	542,371
Other	195.4	19.9	18.2	275	11.5	-0.06	0.4	-2.1	-0.01	1.0	0.229	65,753
Jersey	306.9	21.6	7.7	-271	-46.0	-0.16	3.6	-1.5	0.00	1.3	0.334	67,587
Ayrshire	-46.4	2.7	6.0	311	22.4	-0.20	-6.7	-0.2	-0.08	0.3	0.179	3,504
Milking Shorthorn	-228.1	-21.8	-7.4	-70	25.0	-0.12	-1.0	1.0	-0.05	-3.7	-0.273	95
Brown Swiss	-155.6	-14.1	1.8	50	35.8	-0.24	-5.1	4.1	-0.02	-1.9	-0.065	64
Guernsey	-246.1	-14.7	-11.4	-271	27.7	0.00	-2.7	4.2	-0.16	-5.0	-0.293	35
Weighted Average	247.7	25.1	21.6	343	11.6	-0.02	1.2	-2.6	0.01	1.5	0.301	884,529

(Evaluation date: 17 May 2024)

Survivability is measured by the percentage of cows that have a lactation recorded for consecutive years. In the 2023/24 season, survivability was slightly higher than the previous year for animals in the age groups of 2-3 years, and 5-6 years. For animals in the other age groups, survivability decreased slightly compared to the previous season. In the 2023/24 season, cows aged 3-4 years had the highest percentage of survival (86.9%), followed by animals aged 4-5 years (86.9%) and 2-3 years (85.1%).

The value in the “2-3 years” age group is the percentage of cows that were milking as two-year-olds in the 2022/23 season and are now milking as three-year-olds in the 2023/24 season. The percentage of survivability of the 2-3 age group has consistently increased since the 2016/17 season.

Table 4.22: Trend in survivability percentages (% of age group surviving to next lactation)

Season	2-3 years	3-4 years	4-5 years	5-6 years	6-7 years	7-8 years	8-9 years
2004/05	83.0	88.0	87.4	83.0	80.3	74.9	69.7
2005/06	82.5	88.5	88.6	84.9	80.2	77.0	70.8
2006/07	82.7	88.1	88.5	84.7	80.2	75.2	71.7
2007/08	81.5	88.4	87.9	84.2	80.7	75.1	70.1
2008/09	83.9	87.8	88.0	83.7	80.4	76.2	71.1
2009/10	83.1	88.1	87.5	83.0	78.5	73.8	68.1
2010/11	83.4	87.8	86.2	81.4	77.4	72.0	66.5
2011/12	84.5	89.4	87.8	82.6	77.2	72.6	65.7
2012/13	84.2	89.7	88.3	83.2	78.2	72.4	67.1
2013/14	84.4	88.4	87.2	82.5	77.6	72.1	64.9
2014/15	83.7	86.3	85.6	81.1	76.6	71.0	64.7
2015/16	83.8	87.8	85.5	80.7	75.8	70.2	63.9
2016/17	81.8	85.6	84.5	79.4	74.6	69.2	63.1
2017/18	82.6	85.7	84.9	80.3	74.4	69.9	64.5
2018/19	83.0	86.2	86.0	81.2	76.0	69.7	65.1
2019/20	83.7	85.8	85.7	81.2	76.1	71.4	65.3
2020/21	84.4	86.1	85.2	80.7	75.9	71.3	65.8
2021/22	85.0	87.3	86.2	81.2	76.7	71.1	65.8
2022/23	85.0	87.3	86.9	81.4	75.8	70.5	65.2
2023/24	85.1	86.9	86.2	81.8	75.7	70	65.1



# 5. Prices received

## 5.1. Milk prices

Up until the end of the 2000/01 season, dairy farmers received payment from the New Zealand Dairy Board through a system of advance and final payouts via dairy companies. Now, in addition to advance and final payouts, farmers get a margin based on dairy company efficiency, product mix and investment policies; together known as the total payout.

The introduction of the Dairy Industry Restructuring Act 2001 opened the way for New Zealand's largest dairy companies, Kiwi Cooperative Dairy Company (Kiwi) and New Zealand Dairy Group (NZDG) to merge with the Dairy Board to form Fonterra. Further, the Act allowed the smaller dairy companies, such as Tatua and Westland, to remain separate co-operatives. Consequently, the historic payment system became redundant. As of 2019/20, Tatua and Fonterra are the two remaining dairy cattle co-operatives with established commercial arrangements for sale of dairy products. Payments to seasonal supply farmers are based on the "A+B±C" system, which incorporates payments for milkfat (A) and protein (B) with an adjustment for milk volume (C). The payment system for winter milk supply varies between companies. Some winter milk payment systems are based on the milk volume only, whereas other payment systems are similar to seasonal supply payment systems, which incorporate the milkfat, protein, and volume components of milk.

- The average dairy co-operative payout in 2023/24 was \$8.90/kg of milksolids.

The weighted average dairy co-operative total payout (per kilogram of milksolids) received by dairy farmers from seasonal milk supply is shown in Table 5.1 and Graph 5.1 (weightings are based on the number of herds supplying each dairy co-operative). The average payout is given in both nominal and inflation-adjusted dollars using the Consumers Price Index (CPI) provided by Statistics New Zealand. The nominal average dairy cooperative payout in 2023/24 was \$8.90 per kg milksolids, \$0.47 above the five-year average of \$8.43 (partly due to the inclusion of the capital payment from the Soprole divestment). However, when adjusted for inflation, the 2023/24 payout was actually \$0.35 below the five-year inflation-adjusted average of \$9.25 per kg milksolids.

Table 5.1: Trend in prices received for milksolids

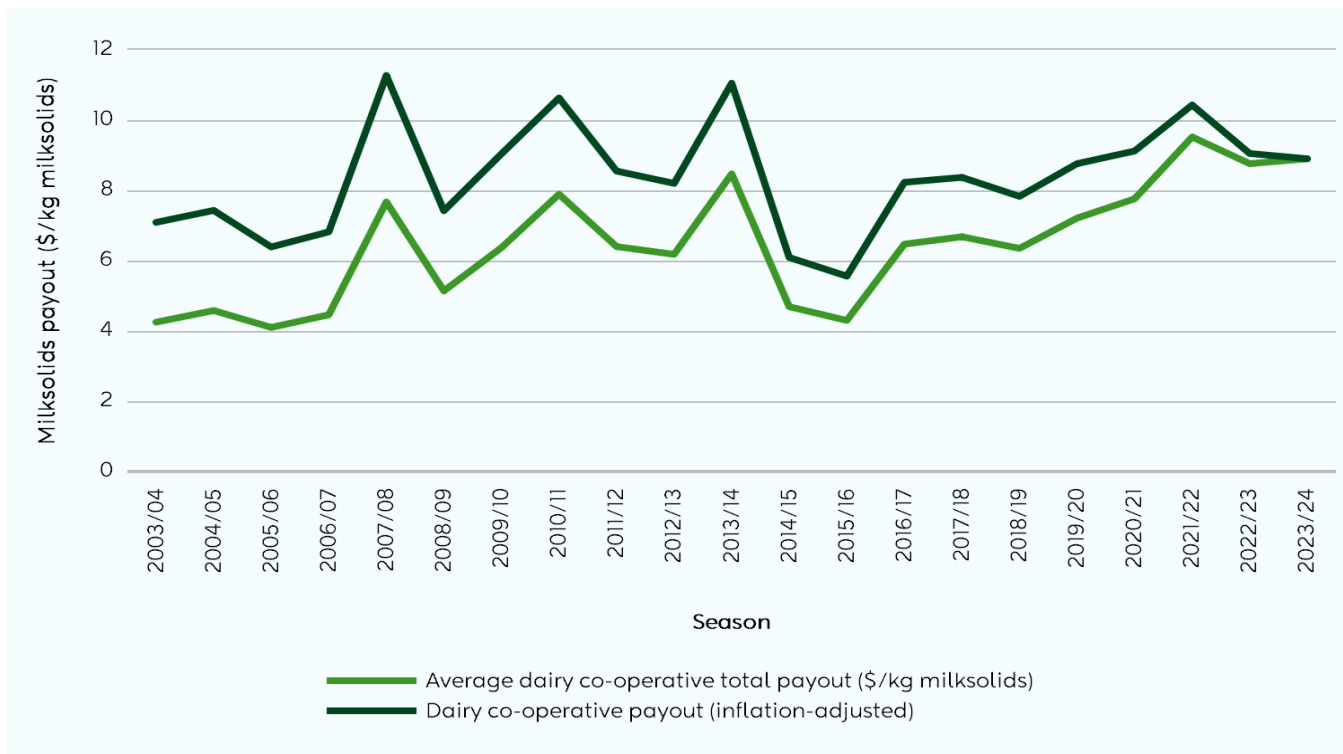
Season	Average dairy co-operative total payout (\$/kg milksolids)	Dairy co-operative payout (inflation-adjusted)
2003/04	4.25	7.09
2004/05	4.58	7.43
2005/06	4.10	6.39
2006/07	4.46	6.82
2007/08	7.67	11.27
2008/09	5.14	7.42
2009/10	6.37	9.04
2010/11	7.89	10.63
2011/12	6.40	8.55
2012/13	6.18	8.20
2013/14	8.47	11.05
2014/15	4.69	6.09
2015/16	4.30	5.56
2016/17	6.47	8.23
2017/18	6.68	8.37
2018/19	6.35	7.83
2019/20	7.21	8.76
2020/21	7.76	9.12
2021/22	9.52	10.43
2022/23	8.76	9.05
2023/24	8.90	8.90

Note:

- Milksolids payout excludes dairy co-operative retentions and deduction for DairyNZ Levy).

- The "Dairy co-operative payout (inflation-adjusted)" values have been weighted to give real dollar values using the Consumers Price Index for the end of the June quarter (Sourced from Statistics New Zealand).
- Between 2009/10 and 2018/19, the average dairy co-operative payout was estimated from the Fonterra, Tatua, and Westland payouts.
- From 2019/20 the average dairy co-operative payout is estimated from the Fonterra and Tatua payouts (the Fonterra payout includes dividend payments).
- In the 2023/24 Dairy Statistics, Fonterra milksolids payout for the 2022/23 season was adjusted to only include the farmgate milk price and dividend payments.
- The Fonterra milksolids payout for the 2023/24 season included the additional payment from the divestment of Soprole.

Graph 5.1: Trend in milksolids payout to dairy farmers



## 5.2. Dairy farm land prices

- The number of dairy farms sold in 2023/24 is the second lowest of the last decade.
- Dairy farm land price per hectare decreased in 2023/24 is the lowest of the last decade.

Dairy farm land sales are based on data provided by the Real Estate Institute of New Zealand (REINZ) on a seasonal basis. Up until the 2019/20 season, raw data provided by REINZ was weighted by the number of farms in each region. From the 2019/20 season onwards, data is no longer weighted due to changes in the way data is provided by REINZ. The new method produces values that are consistent with changes observed and past season figures. The farms sold are considered to be business units.

The average sale price of dairy farms increased to \$5.00 million in 2023/24, \$135,428 higher than the previous season (\$4.87 million) (Table 5.2). Dairy farm land average sale price per hectare was the lowest in the last eleven seasons (Graph 5.2).

Farms sold in 2023/24 were on average 23 hectares larger than farms sold in 2022/23. The average sale price per hectare of \$30,584 decreased by 12% on the previous season.

Table 5.2: Trend in dairy land sale values

Season	Number of dairy farms sold	Average sale price (\$)*	Inflation adjusted average sale price (\$)	Average land area (ha)*	Average sale price/ha (\$)*	Inflation adjusted average sale price/ha (\$)	Average sale price/KgMS (\$)*	CPI
2013/14	312	5,174,010	6,750,093	142	36,369	47,448	42	975
2014/15	244	5,228,018	6,792,685	132	39,577	51,422	44	979
2015/16	192	5,381,697	6,963,905	169	36,557	47,305	39	983
2016/17	217	4,808,676	6,116,636	151	37,835	48,126	40	1,000

Season	Number of dairy farms sold	Average sale price (\$)*	Inflation adjusted average sale price (\$)	Average land area (ha)*	Average sale price/ha (\$)*	Inflation adjusted average sale price/ha (\$)	Average sale price/KgMS (\$)*	CPI
2017/18	226	4,935,487	6,185,162	130	38,015	47,640	40	1,015
2018/19	148	5,125,837	6,317,892	144	36,846	45,415	38	1,032
2019/20	113	4,451,927	5,408,645	133	33,410	40,590	37	1,047
2020/21	198	4,810,641	5,655,393	153	31,393	36,906	35	1,082
2021/22	200	4,800,278	5,259,219	139	34,427	37,718	35	1,161
2022/23	140	4,869,150	5,031,323	141	34,600	35,752	37	1,231
2023/24	117	5,004,578	5,004,578	164	30,584	30,584	36	1,272

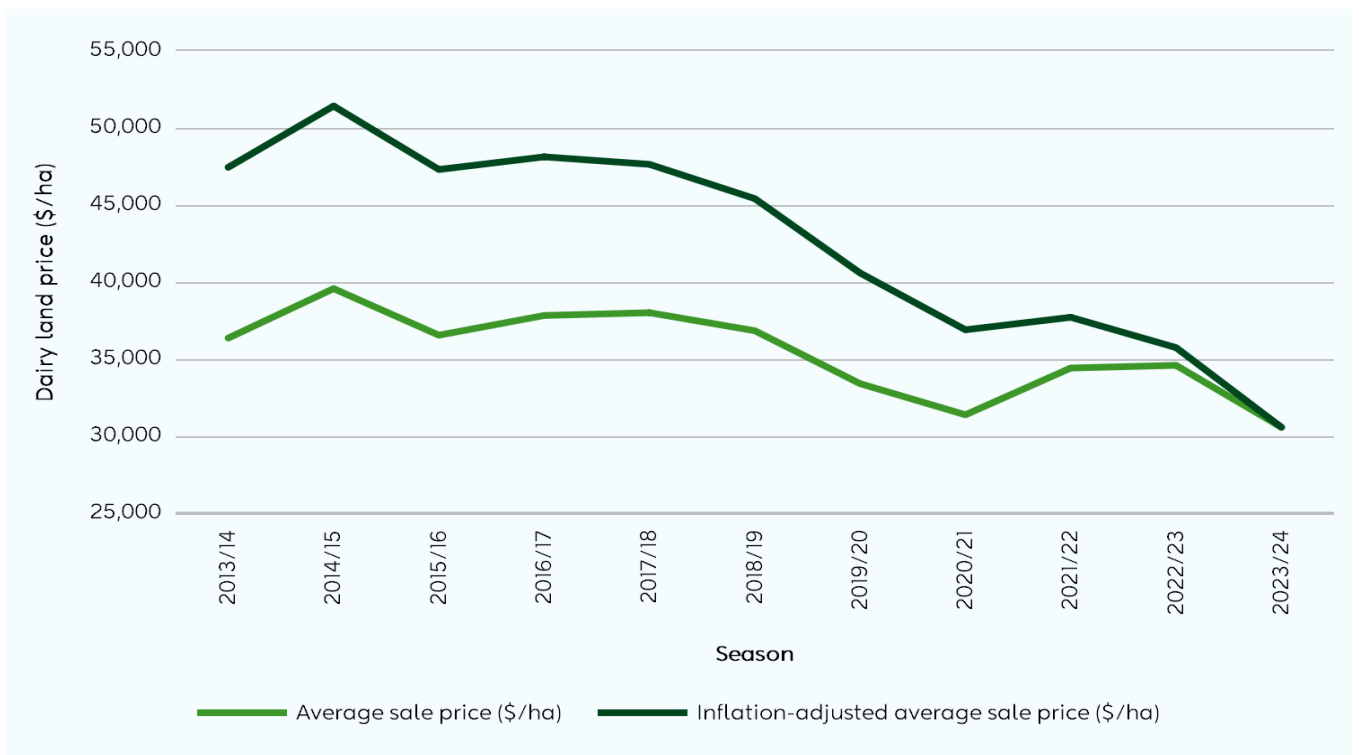
Note:

- Source: Real Estate Institute of New Zealand (REINZ), Statistics New Zealand, DairyNZ.

- Number of dairy farms sold is for a season (01-Jun to 31-May) and excludes support blocks and non-economic units.

\* Pre-2019/20 figures have been weighted by the number of dairy farms in each region. From 2019/20 onwards, figures have not been weighted.

Graph 5.2: Trend in dairy land sale price per hectare



# 6. Disease control

## 6.1. Tuberculosis (Tb) control

Control of Tuberculosis (Tb) over the agricultural industry is managed by TBfree New Zealand. The primary objective of TBfree is to reduce the number of infected herds and to prevent Tb vector free areas becoming vector risk areas. The status of a vector area is determined by the prevalence of wild animals (e.g., possums and ferrets) that are considered a source of infection.

The total number of infected dairy herds in 2023/24 was 6 (Table 6.1), compared to 7 in 2022/23. The North Island recorded 5 infected herds in 2023/24, 3 herds higher than 2022/23. Conversely, the South Island recorded 1 infected herd in 2023/24, compared to 5 in 2022/23. The number of tuberculous dairy cattle decreased from 50 in 2022/23 to 11 in 2023/24, this is the lowest number of tuberculous dairy cattle recorded since 2006/07 (the lowest number recorded was 10 in 2018/19).

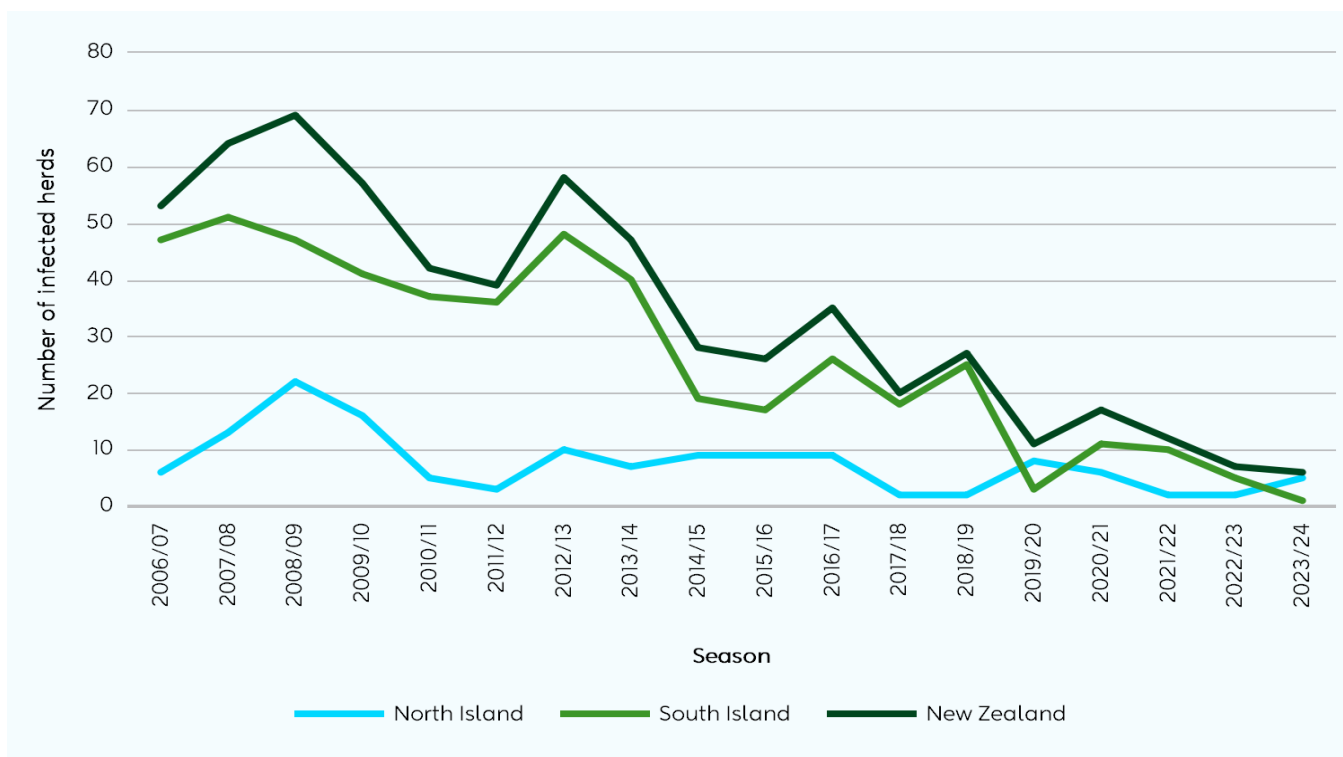
Table 6.1: Tuberculosis (Tb) testing and results in 2023/24

Region	Vector Status	Number of infected dairy herds at the end of the season (30 June)	Number of dairy cattle primary tested during the season	Number of tuberculous dairy cattle
Northland	Free	0	38,314	0
Auckland	Free	0	6,330	0
Waikato	Free	2	231,543	5
	Risk	2	28,108	3
Bay of Plenty	Free	0	27,533	0
Gisborne	Free	0	116	0
	Risk	0	625	0
Hawkes Bay	Free	0	8,439	0
	Risk	1	22,786	1
Taranaki	Free	0	56,517	0
Manawatu/Wanganui	Free	0	44,591	0
	Risk	0	6,905	0
Wellington	Free	0	8,736	0
	Risk	0	44,381	0
North Island	Free	2	422,119	5
	Risk	3	102,180	4
<b>North Island</b>	<b>Total</b>	<b>5</b>	<b>524,299</b>	<b>9</b>
Marlborough	Free	0	2,626	0
Tasman/Nelson	Free	0	14,203	0
	Risk	0	4,285	0
West Coast	Free	0	4,266	0
	Risk	1	138,691	2
Canterbury	Free	0	165,330	0
	Risk	0	17,314	0
Otago	Free	0	48,686	0
	Risk	0	58,677	0
Southland	Free	0	111,877	0
	Risk	0	26,280	0
South Island	Free	0	346,988	0
	Risk	1	245,247	2
<b>South Island</b>	<b>Total</b>	<b>1</b>	<b>592,235</b>	<b>2</b>
New Zealand	Free	2	769,107	5
	Risk	4	347,427	6
<b>New Zealand</b>	<b>Total</b>	<b>6</b>	<b>1,117,159</b>	<b>11</b>

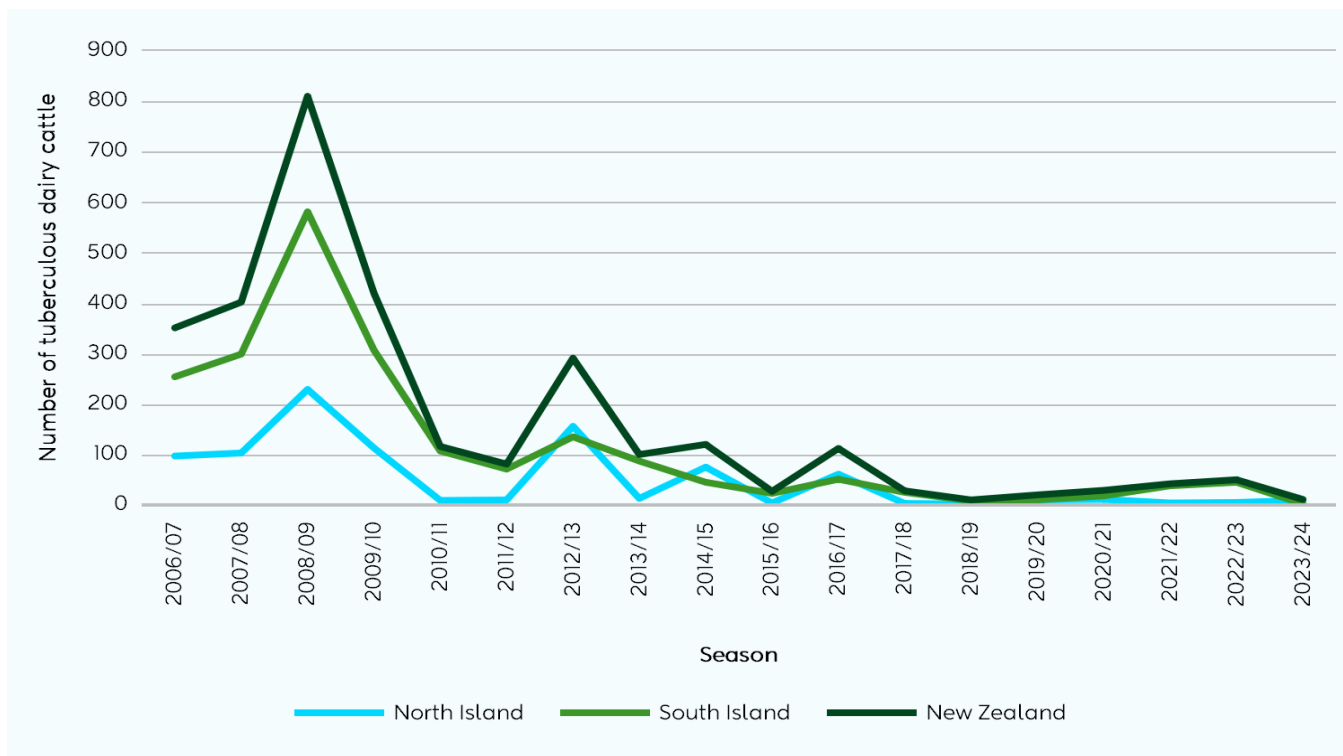
Note: Data sourced from TBfree New Zealand. Tuberculous animals include lesioned reactor cattle and lesioned cull cattle.

The trend in the number of infected herds, by island and nationally, is presented in Graph 6.1. Nationally, the past 18 seasons has seen an 88.7% decrease in the number of infected herds. The overall number of infected animals has decreased by 96.9% over the same period (Graph 6.2).

Graph 6.1: Trend in the number of infected herds since 2006/07



Graph 6.2: Trend in the number of tuberculous dairy cattle since 2006/07



# 7. Appendices

## 7.1. Appendix 1: Farming regions and districts

The following map shows the farming regions used in all analyses presented in this report. The list of districts, which follow territorial local authority boundaries (except in Auckland, Christchurch and Banks Peninsula), within each region is also given.

### 1 Northland

Far North  
Whangarei  
Kaipara

### 2 Auckland

Rodney  
North Shore  
Waitakere  
Auckland  
Manukau  
Papakura  
Franklin

### 3 Waikato

Thames/Coromandel  
Hauraki  
Waikato  
Matamata/Piako  
Hamilton  
Waipa  
Otorohanga  
South Waikato

### 4 Bay of Plenty

Western Bay of Plenty  
Tauranga  
Whakatane  
Kawerau  
Opotiki

### 5 Central Plateau

Rotorua  
Taupo

### 6 Western Uplands

Waitomo  
Ruapehu

### 7 East Coast

Gisborne  
Wairoa

### 8 Hawkes Bay

Hastings  
Napier  
Central Hawkes Bay

### 9 Taranaki

New Plymouth  
Stratford  
South Taranaki

### 10 Manawatu

Wanganui  
Rangitikei  
Manawatu  
Palmerston North  
Horowhenua  
Kapiti  
Porirua  
Upper Hutt  
Lower Hutt  
Wellington

### 11 Wairarapa

Tararua  
Masterton  
Carterton  
South Wairarapa

### 12 Nelson/Marlborough

Tasman  
Nelson  
Marlborough  
Kaikoura

### 13 West Coast

Buller  
Grey  
Westland

### 14 North Canterbury

Hurunui  
Waimakariri  
Christchurch  
Banks Peninsula  
Selwyn  
Ashburton

### 15 South Canterbury

Timaru  
Mackenzie  
Waimate

### 16 Otago

Waitaki  
Central Otago  
Queenstown/Lakes  
Dunedin  
Clutha

### 17 Southland

Southland  
Gore  
Invercargill

