Key performance indicators (KPIs) for the UK national dairy herd

A study of herd performance in 500 Holstein/Friesian herds for the year ending 31st August 2025

Dr James Hanks
Dr Mohamad Kossaibati
Dr Emma Holt

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Veterinary Epidemiology & Economics Research Unit (VEERU),
School of Agriculture Policy & Development,
University of Reading,
P.O.Box 237
Reading,
RG6 6AR
panveeru@panveeru.net

University of Reading

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1.0 Executive Summary

This is the 16th annual study of key performance indicators (KPIs), based on a cross-section of 500 UK dairy herds that milk record with National Milk Records (NMR). The study provides up to date KPI benchmark values, representative of the national dairy herd, that farmers and advisers can use to compare against the performance of their own herds. The KPIs are summarized in Table 1 (page 6). The inclusion of data from earlier studies, back to 2010, highlights short and longer-term trends.

Herd demographics and longevity: Since 2016, the median **exit rate** has remained relatively stable between 26% and 28%, but cows are continuing to leave the herd after shorter productive lives. The median **productive life** (first calving to exit) has decreased by 6.5% from 1,383 to 1,293 days. The median **age at exit** has decreased from 6.1 to 5.8 years but the median number of completed **lactations at exit** has remained stable at 3.6 lactations. Herd structures remained largely unchanged. 1st, 2nd, 3rd and 4th or higher lactation cows typically accounted for 29%, 23%, 18% and 29% of cows in the herd, respectively. These trends indicate that cows are completing the same number of lactations within a progressively shorter productive lifespan and are exiting the herd at a younger age.

Fertility: Fertility parameters have markedly improved since 2010. However, the improvements in some parameters have paused. Since 2021, the median **age at first calving (AFC)** has remained between 799 days (26.3 months) and 809 days (26.6 months). Likewise, the median **% of cows served by 80 days post-partum (DPP)** has remained stable at ~60% and the median **% of cows conceived by 100 DPP** has remained stable at ~39%. However, since 2016, the median **heat detection** (35% to 43%) and **conception rate** (34% to 40%) have consistently increased. Nonetheless, the median **calving interval** has declined from 407 to 391 days, helping to explain why cows are experiencing shorter productive lifespans while completing a consistent number of lactations prior to exit.

Milk yield and composition: After a slight decline in milk yields from 2022 to 2024, milk production returned to 2021 levels**.** In 2025, the median **lifetime milk/cow/day** was 13.1 kg, **305-day milk yield** was 9,136 kg and **milk/cow/year** was 8,962 kg. However, the median **% of first-lactation cows producing ≤75% of mature cows (lactation 3+) 305-day milk yields** increased from 27% in 2020 to 33% in 2025. First lactation milk yields do not seem to have increased in line with increases in mature cow yields. Since 2020, the median 305-day milk yield for first lactation cows has reduced by 46 kg. Over the same period, the yield decreased by 10 kg for second lactations cows and increased by 349 kg and 449 kg for cows in their third and fourth or higher lactation, respectively. Meanwhile, **average**

milk fat has steadily increased from 4.03% (2016) to 4.30% (2025). **Average milk protein** has gradually increased by smaller increments from 3.26% (2016) to 3.38% (2025). **Combined fat and protein yield per year** has increased in-line with milk yield trends from 604 kg (2016) to 668 kg (2025).

Somatic cell count (SCC) and mastitis: As with fertility KPIs, SCC and mastitis related KPIs have undoubtedly improved since 2010, but the trends in many KPIs have plateaued. The median **average herd SCC** has decreased from 185,000 cells/ml (2016) to 160,000 cells/ml (2025), after slight increases to 168,000 cells/ml and 171,000 cells/ml in 2023 and 2024, respectively. The median % of milk samples with an **SCC ≥ 200,000 cells/ml** has stayed at 15% to 16% since 2021, while those with an **SCC ≥ 500,000 cells/ml** have remained at 6% to 7% since 2015. Encouragingly, the median **% of cows dried off with no SCC samples ≥ 200,000 cells/ml** has continued to improve from 41% (2016) to 53% (2025) and median number of **mastitis cases per year per 100 cows** has decreased from 36 (2016) to 19 (2025).

The 500-herd KPI report supports informed discussion between farmers, vets and advisers primarily through benchmarking a herd's performance against a large cross-section of commercial dairy herds. As well as highlighting areas for potential improvement, this report provides realistic target values to support the decision making process. Users are strongly encouraged to apply an holistic approach to benchmarking, appreciating that positive improvements in one KPI may impact negatively elsewhere. It is discussing the competing demands of herd production, health and economics that will result in sound long-term decision making.

2.0 Acknowledgements

The authors are very grateful to National Milk Records (NMR) for their assistance and cooperation with the preparation of this study. The authors also acknowledge the contribution of VEERU/PAN Livestock Services Ltd colleagues: Kulwant Channa for his technical support, and Nick Taylor for proof-reading.

3.0 Description of the study and methods used

Objectives

This is the 16th annual study describing key performance indicators (KPIs) of production, fertility and health in commercial black and white dairy herds in the United Kingdom. The principal objective of these studies has been to provide farmers and technical advisers with accurate and up-to-date information on the variation in performance of commercial dairy herds.

The KPIs are based on milk recording data from 500 commercial black and white herds for the 12 month period ending on 31st August 2025. The calculations used to generate these parameters are identical to those used by InterHerd+, allowing farmers and technical advisers to compare the performance of any milk recording herd directly with the 500 herd sample that is representative of the national performance. In other words, for each parameter: **"How does the performance of the herd compare to benchmarked herds? Which KPIs highlight an area of improvement within the herd?**

Following the analysis of individual parameters, the trends since 2010 for a selection of the KPIs are displayed in a Supplement file. A KPI template of 80 parameters is available for InterHerd+ users to update the KPI parameters to the target values from the 2025 study.

Herd selection

The source of data is the monthly milk records obtained by NMR. The 500 herds used in the study all fully milk record on a monthly assisted basis and are approximately 10% of herds recorded by NMR. Herds were selected using random numbers to ensure a representative cross-section of the sample. The herds are all predominantly comprised of black and white breeds (Holstein, Holstein-Friesian, Friesian) and have recorded for a minimum of two years. Where possible the same herds used in the 2024 study were maintained for the 2025 herds' sample. Herds with poorly recorded fertility data (inadequate recording of services and pregnancy diagnoses), as well as herds no longer recording, were replaced with new herds, again selected using random numbers. In total, 442 herds (88%) were in both the 2024 and 2025 studies.

In 2025, herd size within the 500 hers cohort ranged from 46 to 1212 cows, with a median value of 182 cows (Figure i), 57% of herds were comprised of less than 200 cows and 9% contained over 400 cows.

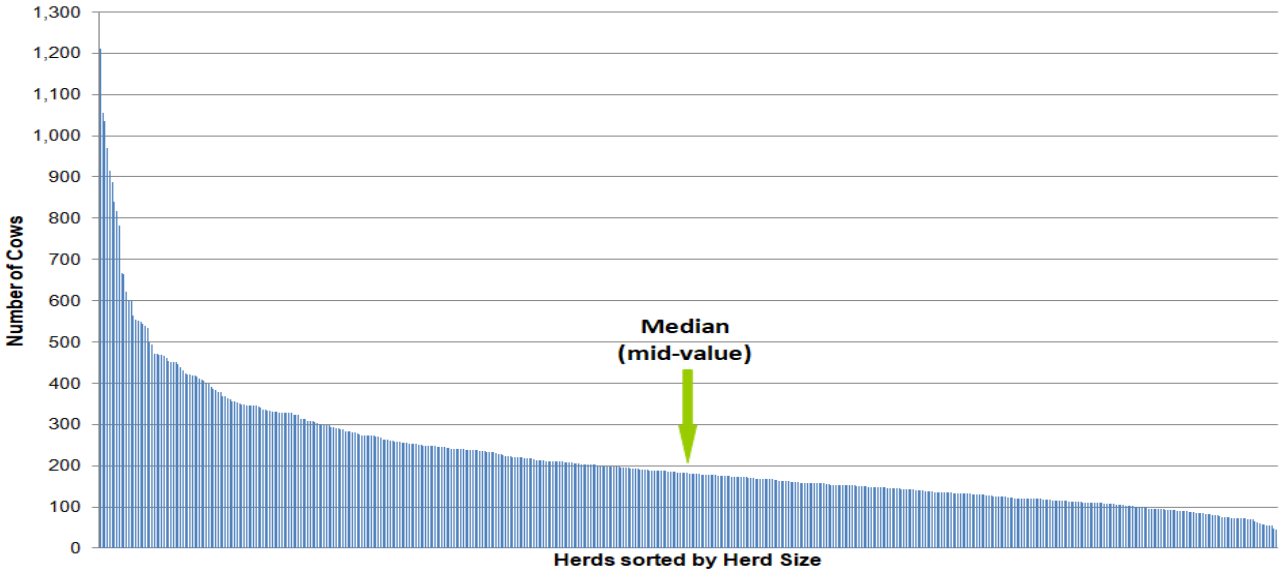


Figure i. Herd size of the 500 herds.

Description of parameters

To minimize the impact of short term seasonal variations, the key performance indicator values are calculated using data recorded over a full 12 month period. They represent the consolidated or average performance levels achieved by each herd for the period from 01 September 2024 to 31 August 2025. The definitions of each parameter are detailed in Appendix 1.

The performance of each of the 500 herds was displayed as a bar chart. The herds are displayed from "best" to "worst", in ascending or descending order depending on whether it is generally preferable to have a low value (e.g. SCC, calving interval) or a high value (e.g. dry period cure, conception rate). The "best" is always on the left side, nearest the vertical Y axis.

As shown in Figure ii, for each parameter, four statistics are presented:

1. The **median**: The median is the performance of the middle herd. Half the herds do better and half do worse than the median value.

2. The **first quartile (25% value) and third quartile (75% value)**. With the median, these split the herds into four equal groups. The first and third quartile values are the lower and upper limits of performance achieved by the middle 50% of herds. 25% achieve "better" and 25% achieve "worse" than the limits for that parameter.

3. The **target** value used by InterHerd+ is the level achieved or bettered by 25% of the herds in the study. This value is the "**better**" of the **first quartile (25%)** or **third quartile (75%) values.** For

some parameters (e.g. somatic cell count) the target will be the first quartile (lower) value, for others (e.g. dry period cure %) it will be the third quartile (higher) value.

4. The **inter-quartile range** is the difference between the **first quartile (25% value)** and **third quartile (75% value)**. This gives an impression of how widely herds in the middle 50% differ.

As shown below, the KPI value is displayed on the vertical Y axis and bars representing the study herds are arranged along the horizontal X axis. The "best" performing herd is nearest the vertical Y axis with the worst performing herd furthest away.

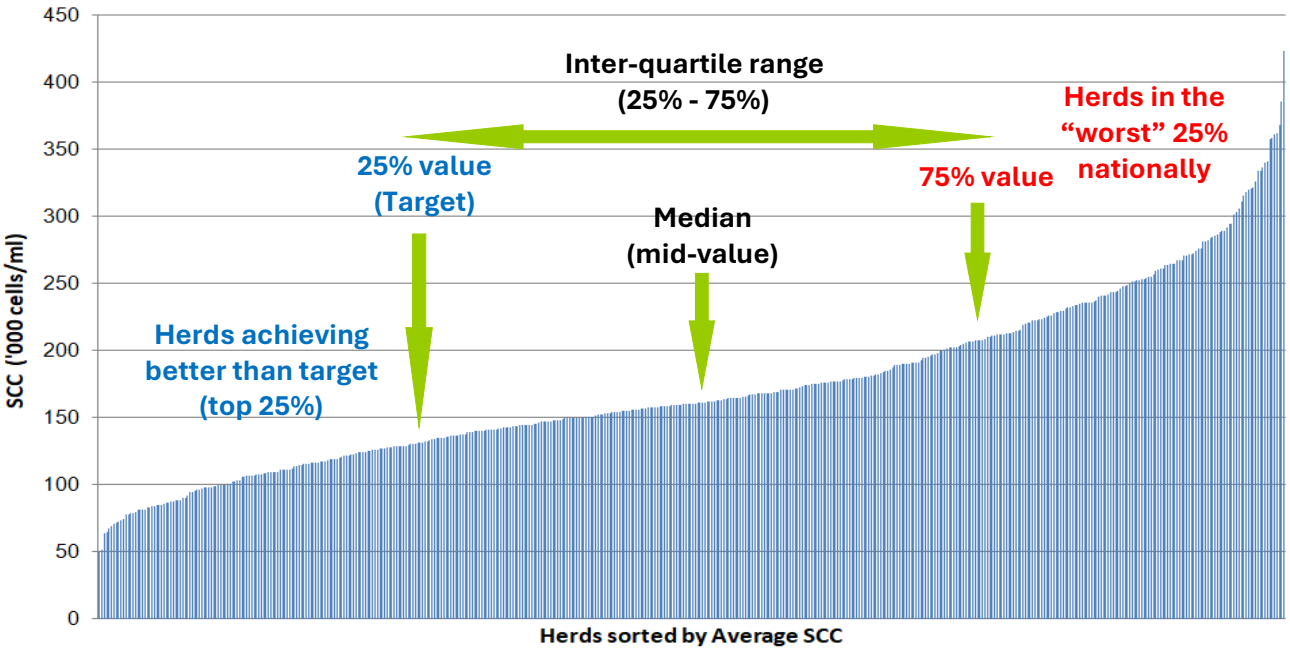


Figure ii. A description of the median, inter-quartile range and target values generated for each parameter using average SCC ('000 cells/ml) as an example whereby the target value is the first quartile since a low SCC is more preferable.

Changes compared to previous studies

1. **Mastitis KPIs:** These KPIs were first included in the annual report in 2016. Any herd that recorded over 5 cases/100 cows in milk/ year was considered to record mastitis. The mastitis KPIs in this report are calculated based on 223 of the 500 herds (45%).
2. **305 day milk/protein/fat yields:** Since 2016, the lactation must be at least 305 days long for inclusion in the calculations for these parameters. Note, the exclusion of lactations shorter than 305 days does not apply to the calculation of the overall lactation yield.

4.0 KPI results for the year ending 31 August 2025

Table 1. Summary of culling, fertility, milk production, somatic cell count and mastitis related KPIs derived from the analysis of 500 NMR milk recording herds for the year ending 31 August 2025.

Parameter	Median	1st – 3rd quartile (25% - 75%)	Target	IQR
Herd demographics/longevity				
A. Exit rate (%)	26%	21% - 33%	**21%**	12%
B. Exit rate in the first 100 days after calving (%)	5%	3% - 7%	**3%**	4%
C(1). Age at exit (years)	5.8	5.2 - 6.5	**6.5**	1.3
C(2). Age at exit (days)	2,112	1,907 - 2,366	**2,366**	459
D. Productive life (days)‡	1,293	1,108 - 1,528	**1,528**	420
E. Age at exit (lactations)	3.6	3.1 - 4.0	**4.0**	0.9
F(1). % of lactation 1 cows	29%	25% - 33%	**25%**	8%
F(2). % of lactation 2 cows	23%	20% - 26%	**26%**	6%
F(3). % of lactation 3 cows	18%	16% - 20%	**20%**	4%
F(4). % of lactation 4+ cows	29%	23% - 36%	**36%**	13%
Fertility				
G. Age at 1st calving (months)	26.5	25.0 - 28.9	**25.0**	3.9
H. % of cows served by day 80	60%	45% - 70%	**70%**	25%
I. % of lactation 1 cows served by day 100	57%	46% - 66%	**66%**	20%
J. Calving to 1st service interval (days)	78	70 - 97	**70**	27
K. % of service intervals at 18-24 days (heat detection)	43%	33% - 51%	**51%**	18%
L. % of service intervals >50 days	18%	11% - 28%	**11%**	17%
M. % of cows eligible for service served	44%	29% - 56%	**56%**	27%
N. % of cows conceived 100 days after calving	39%	29% - 47%	**47%**	18%
O. Conception rate (%)	40%	34% - 46%	**46%**	12%
P. %Eligible for service that conceived (pregnancy rate)	18%	12% - 23%	**23%**	11%
Q. Calving interval (days)	391	380 - 408	**380**	28
R(1). Lactation 1 cows calving interval (days)⁺	389	377 - 407	**377**	30
R(2). Lactation 2 cows calving interval (days)⁺	391	379 - 410	**379**	31
R(3). Lactation 3+ cows calving interval (days)⁺	396	383 - 413	**383**	30
S. % of lactation 1 cows re-caved in the same herd⁺	81%	73% - 88%	**88%**	15%
T. Lactation 1 days in milk to exit (days)⁺	263	207 - 332	**332**	125

Parameter	Median	1st – 3rd quartile (25% - 75%)	Target	IQR
Milk Production				
U. Lifetime milk / cow / day (kg)	13.1	10.8 - 15.4	**15.4**	4.6
V. Milk / cow / year (kg)	8,962	7,559 -10,104	**10,104**	2,545
W. Average protein (%)	3.38%	3.30% -3.47%	**3.47%**	0.17%
X. Average fat (%)	4.30%	4.08% - 47%	**4.47%**	0.39%
Y. 305-day milk yield (kg)	9,136	7,790 -10,253	**10,253**	2,463
Z(1). 305-day milk yield (kg), Lactation 1 cows	7,153	6,155 - 7,916	**7,916**	1,761
Z(2). 305-day milk yield (kg), Lactation 2 cows	8,567	7,288 - 9,838	**9,838**	2,550
Z(3). 305-day milk yield (kg), Lactation 2+ cows	8,929	7,732 -10,045	**10,045**	2,313
Z(4). 305-day milk yield (kg), Lactation 3+ cows	9,082	7,882 -10,204	**10,204**	2,322
ZA. 305-day protein yield (kg)	303	259 - 344	**344**	85
ZB. 305-day fat yield (kg)	385	330 - 438	**438**	108
ZC. % of lactation 1 cows achieving ≤75% of average 3rd calver milk yields	33%	21% - 47%	**21%**	26%
ZD. % of lactation 1 cows achieving 75 to 85% of average 3rd calver milk yields	26%	19% - 32%	**32%**	13%
ZE. % of lactation 1 cows achieving ≥85% of average 3rd calver milk yields	37%	24% - 54%	**54%**	30%
Somatic Cell Count (SCC)				
ZF. Herd average SCC ('000 cells/ml)	160	128 - 210	**128**	82
ZG. % milk samples SCC ≥200,000 cells/ml (*)	15%	12% - 19%	**12%**	7%
ZH. % milk samples SCC ≥500,000 cells/ml	6%	5% - 8%	**5%**	3%
ZI. % High SCC at 1st record in lactation (*)	15%	11% - 19%	**11%**	8%
ZJ. % Chronic milk samples (**)	8%	6% - 10%	**6%**	4%
ZK. Dry period cure (High:Low) (***)	78%	70% - 85%	**85%**	15%
ZL. Dry period protection (Low:Low) (***)	87%	82% - 91%	**91%**	9%
ZM. % Low at last recording of previous lactation (*)	80%	72% - 86%	**86%**	14%
ZN. % New SCC category (**)	5%	4% - 7%	**4%**	3%
ZP. % cows dried-off with no high SCC samples in the lactation (*)	53%	42% - 62%	**62%**	20%
ZP. Threshold Index new high / new low (****)	1.18	1.07 - 1.30	**1.07**	0.23
ZQ. % of cows with New/First/Repeat sample that are Low SCC at next recording (**)	57%	52% - 61%	**61%**	9%
ZR. % of cows with Chronic sample that are low SCC at next recording (**)	21%	17% - 26%	**26%**	9%

Parameter	Median	1st – 3rd quartile (25% - 75%)	Target	IQR
Mastitis				
ZS. % cows drying off with no mastitis cases++	86%	79% - 91%	**91%**	12%
ZT. Mastitis rate (cases/100 cows in milk/year)++	19	12 - 32	**12**	20
ZU. % of cows with Index mastitis case by Day 30++	3%	2% - 5%	**2%**	3%
ZV. Index mastitis rate after Day 30++	13%	9% - 21%	**9%**	12%

ǂ **Productive life** (days): Difference between age at first calving and age at exit.

* **HIGH** SCC is a milk sample with ≥200,000 cells/ml milk.
LOW SCC is a milk sample with below 200,000 cells/ml milk

** **CHRONIC** / **NEW** / **FIRST** and **REPEAT** are the Herd Companion categories describing high SCC cows. See Appendix 2 for definitions.

*** **Dry period protection (High:Low):** The percentage of cows finishing a lactation with a HIGH SCC sample that starts the new lactation with a LOW SCC sample.
Dry period cure (Low:Low): The percentage of cows finishing a lactation with a LOW SCC sample that starts the new lactation with a LOW SCC sample.

**** **Threshold index:** The total cows changing from Low to High SCC divided by the total cows changing from High to Low SCC at consecutive milk recordings.

\+ These values are for the year 2023 (not 2025).

++ The mastitis parameters are derived from a group of 223 herds (within the 500 herds in the study) where mastitis rate >5 cases per 100 cows in milk / year.

5.0 Trends from 2010 to 2025

5.1 Herd demographics and longevity

Since 2016, the median exit rate has remained relatively stable between 26% and 28%, but cows are continuing to leave the herd after shorter productive lives. The median productive life (first calving to exit) has decreased by 6.5% from 1,383 to 1,293 days. The median age at exit has decreased from 6.1 to 5.8 years but the median number of completed lactations at exit has remained stable at 3.6 lactations. Herd structures remained largely unchanged. 1st, 2nd, 3rd and 4th or more lactation cows typically accounted for 29%, 23%, 18% and 29% of cows in the herd, respectively. These trends indicate that cows are completing the same number of lactations within a progressively shorter productive lifespan and are exiting the herd at a younger age.

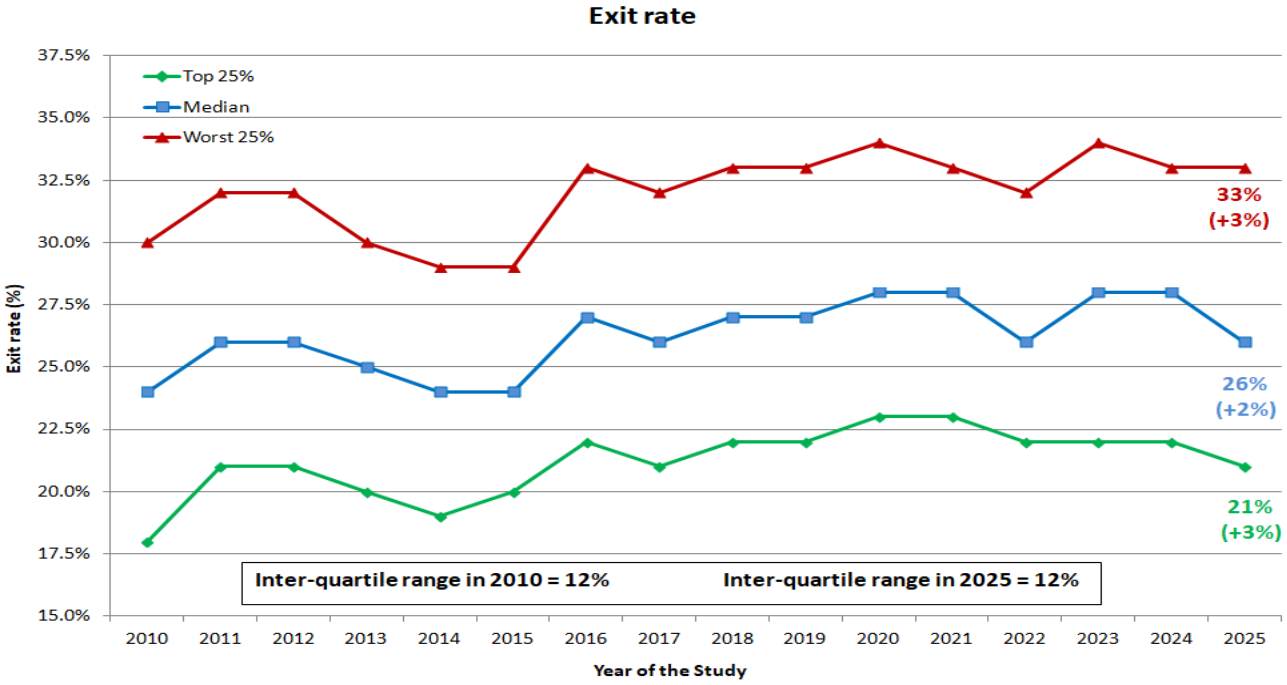


Figure 1. Exit rate, the % of cows which exited the herd (culled, died or sold).

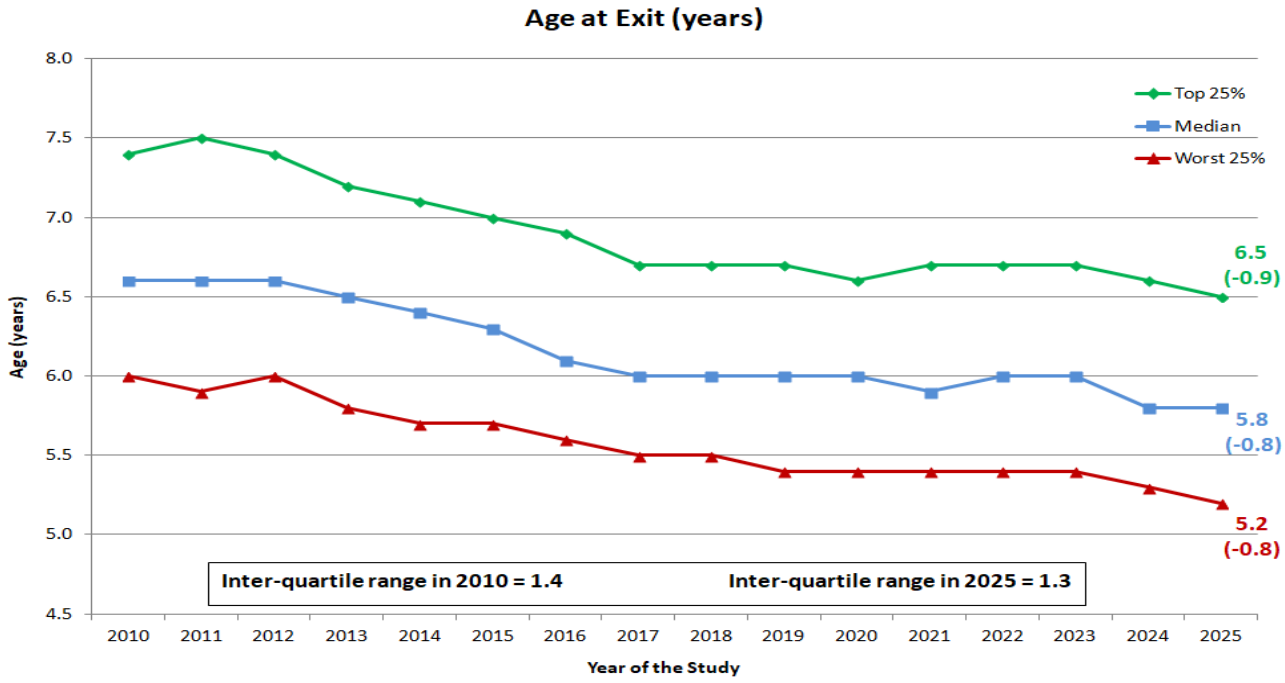


Figure 2. Age of cows at exit (culled, died or sold) in years.

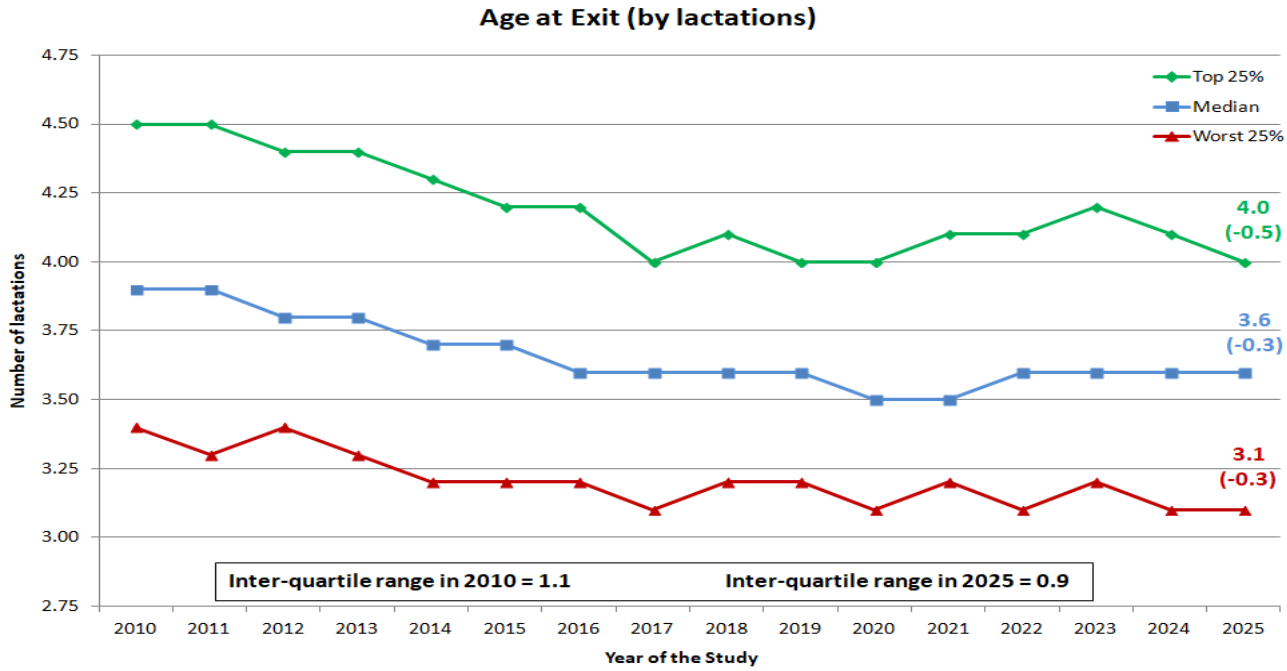


Figure 3. Age of cows at exit (culled, died or sold) in lactations.

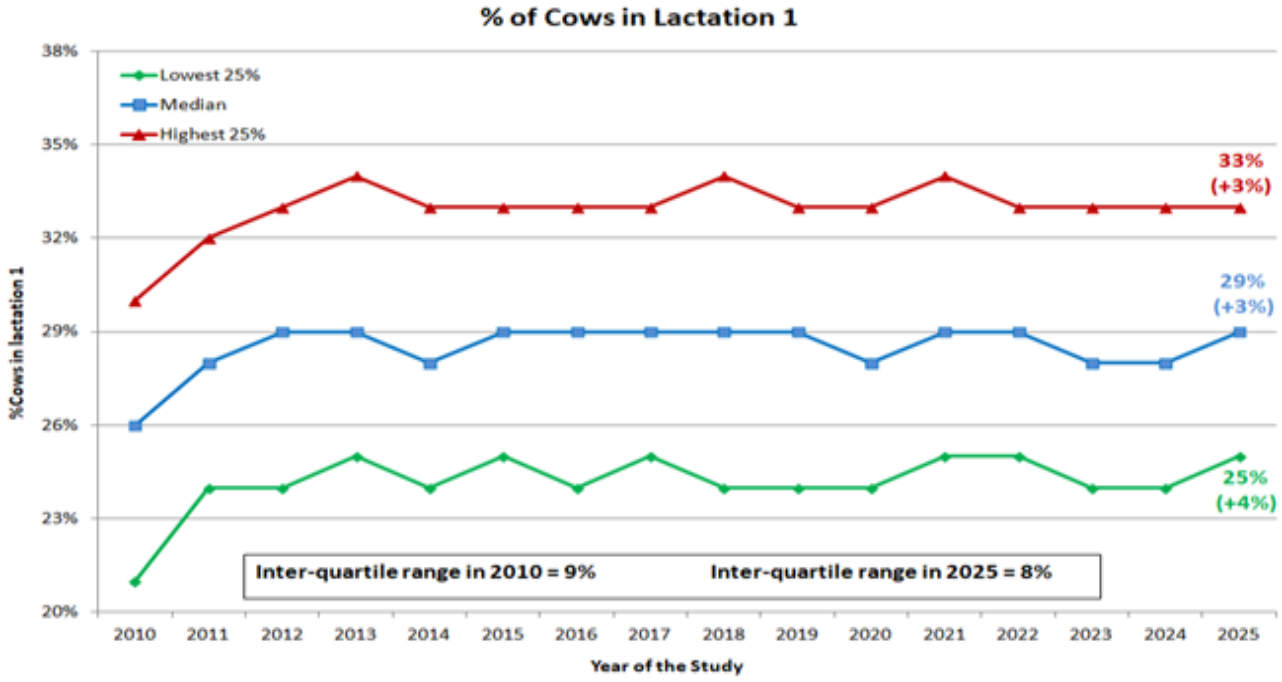


Figure 4. % of cows in lactation 1.

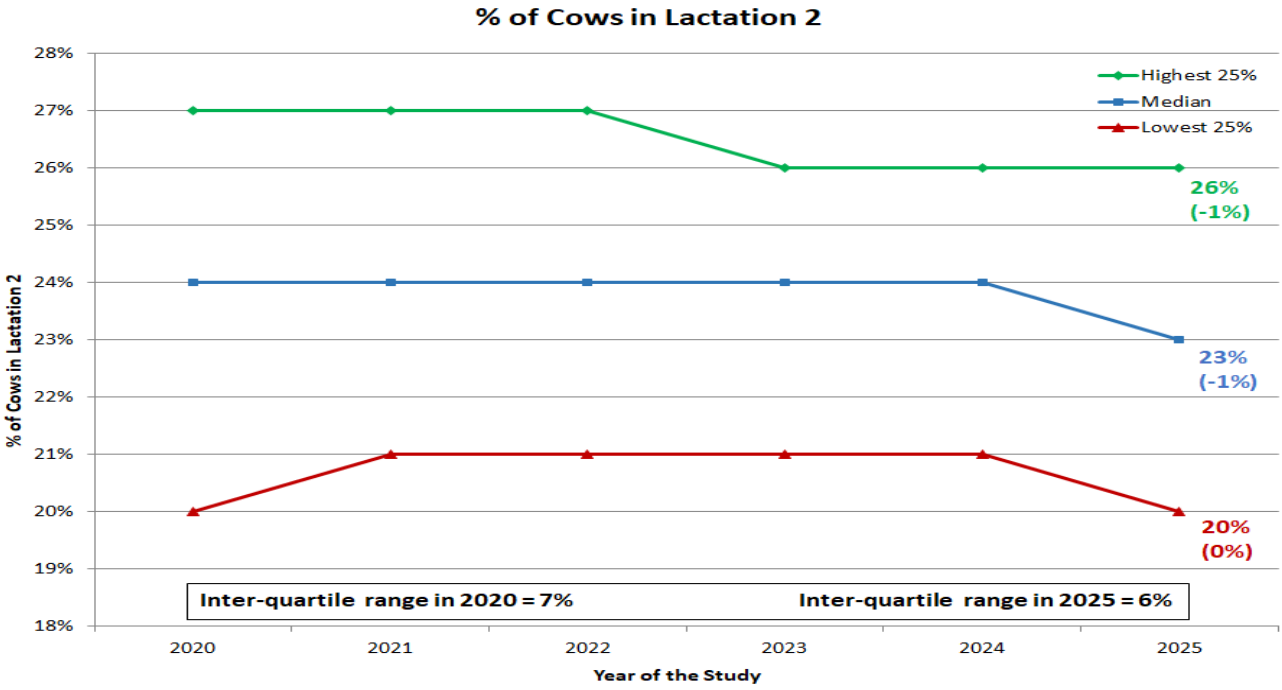


Figure 5. % of cows in lactation 2.

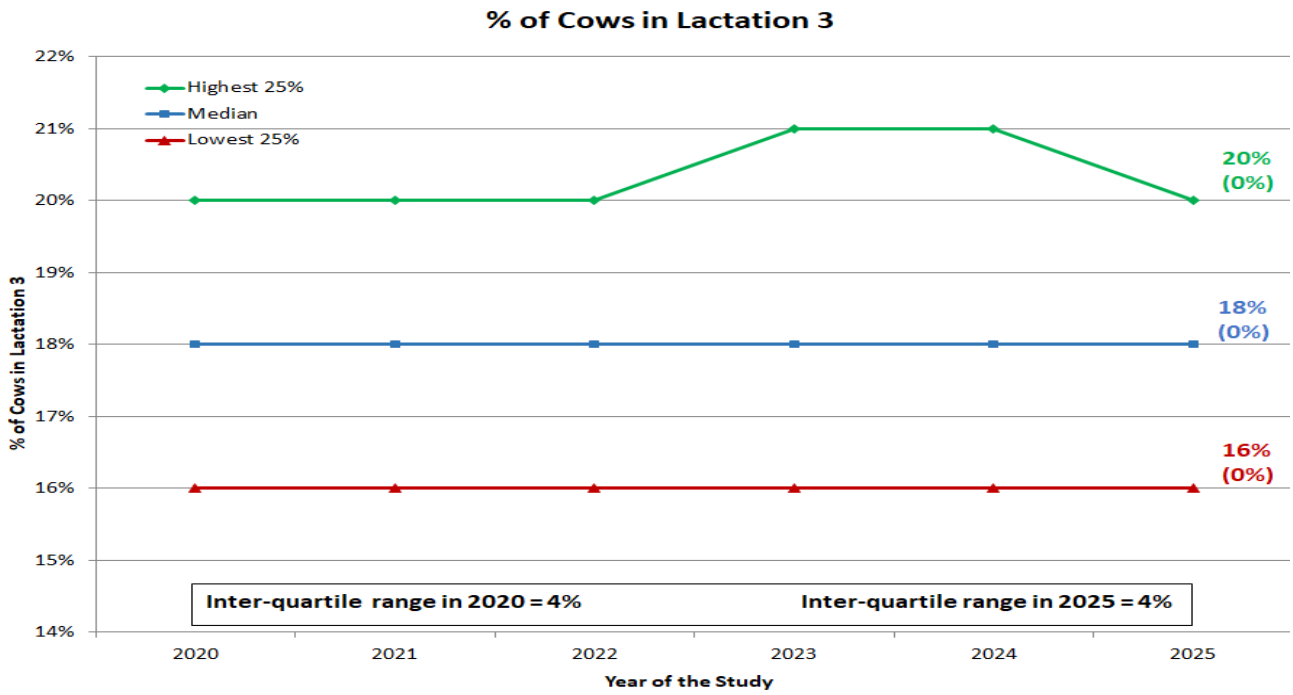


Figure 6. % of cows in lactation 3.

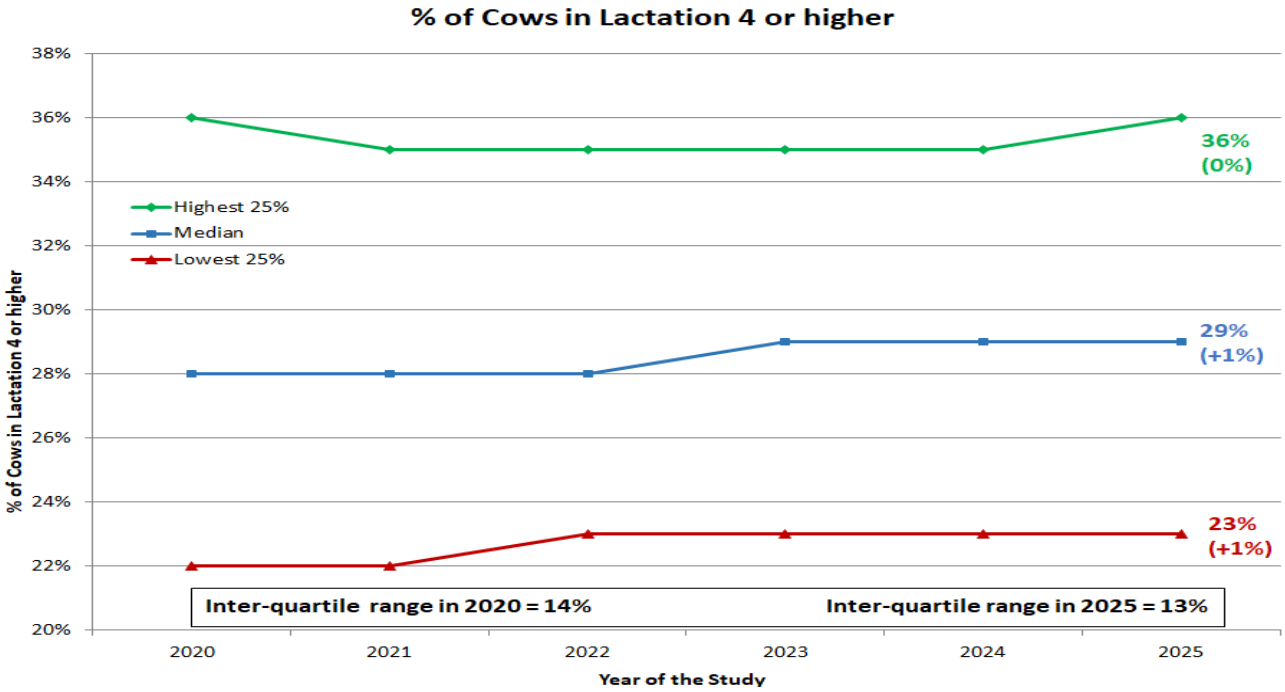


Figure 7. % of cows in lactation 4 or higher.

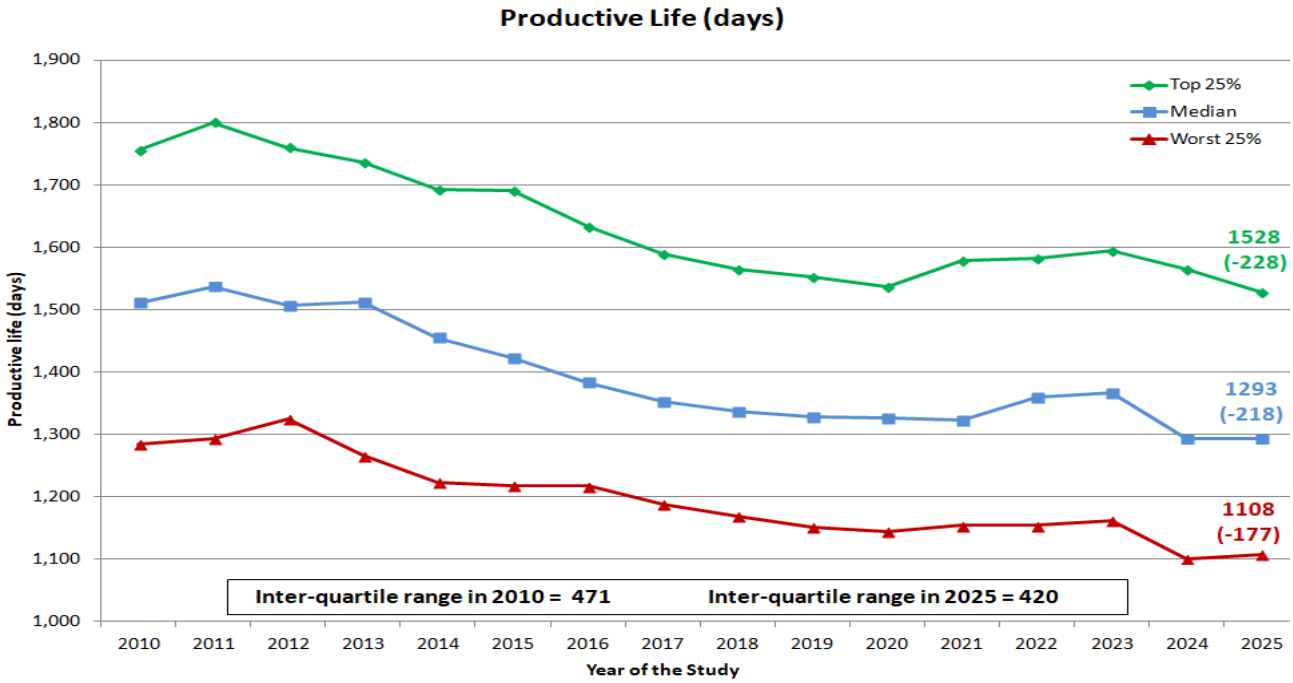


Figure 8. Productive life, age at exit (days) minus age at first calving (days).

5.2 Fertility

Fertility parameters have markedly improved since 2010. However, the improvements in some parameters have paused. Since 2021, the median age at first calving (AFC) has remained between 799 days (26.3 months) and 809 days (26.6 months). Likewise, the median % of cows served by 80 days post-partum (DPP) has remained stable at ~60% and the median % of cows conceived by 100 DPP has remained stable at ~39%. However, since 2016, the median heat detection (35% to 43%) and conception rate (34% to 40%) have consistently increased. Nonetheless, the median calving interval has declined from 407 to 391 days, helping to explain why cows are experiencing shorter productive lifespans while completing a consistent number of lactations prior to exit.

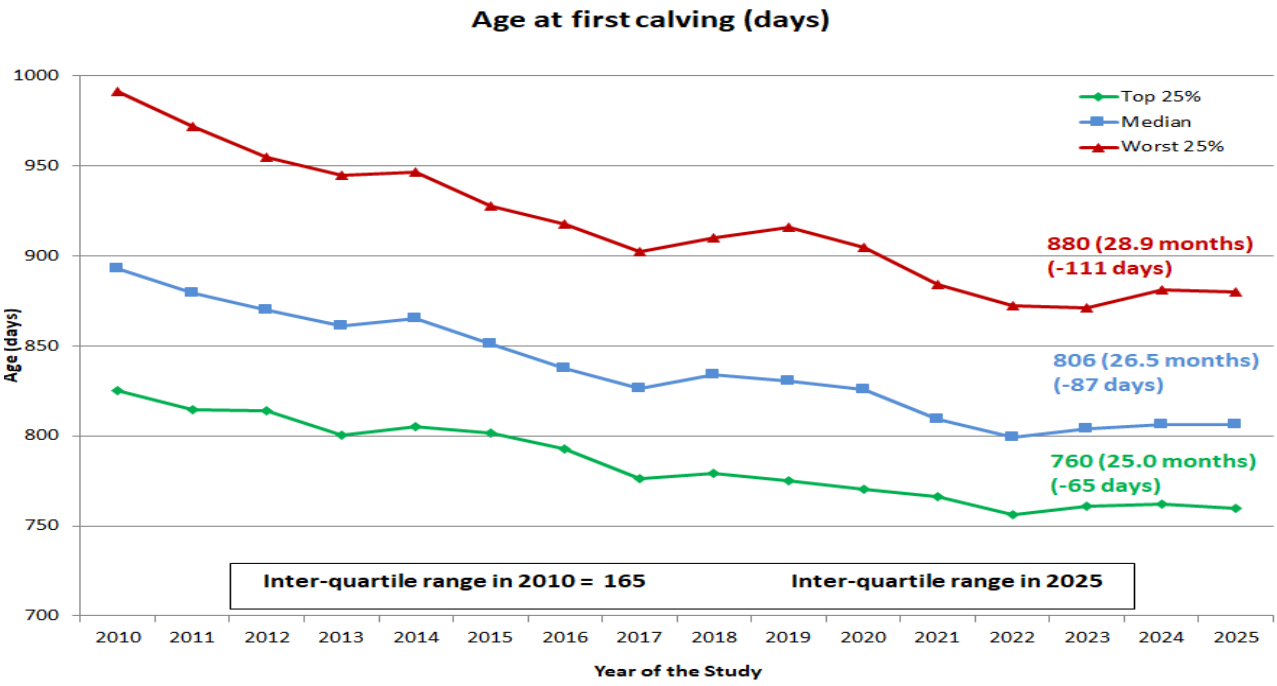


Figure 9. Age at first calving (days).

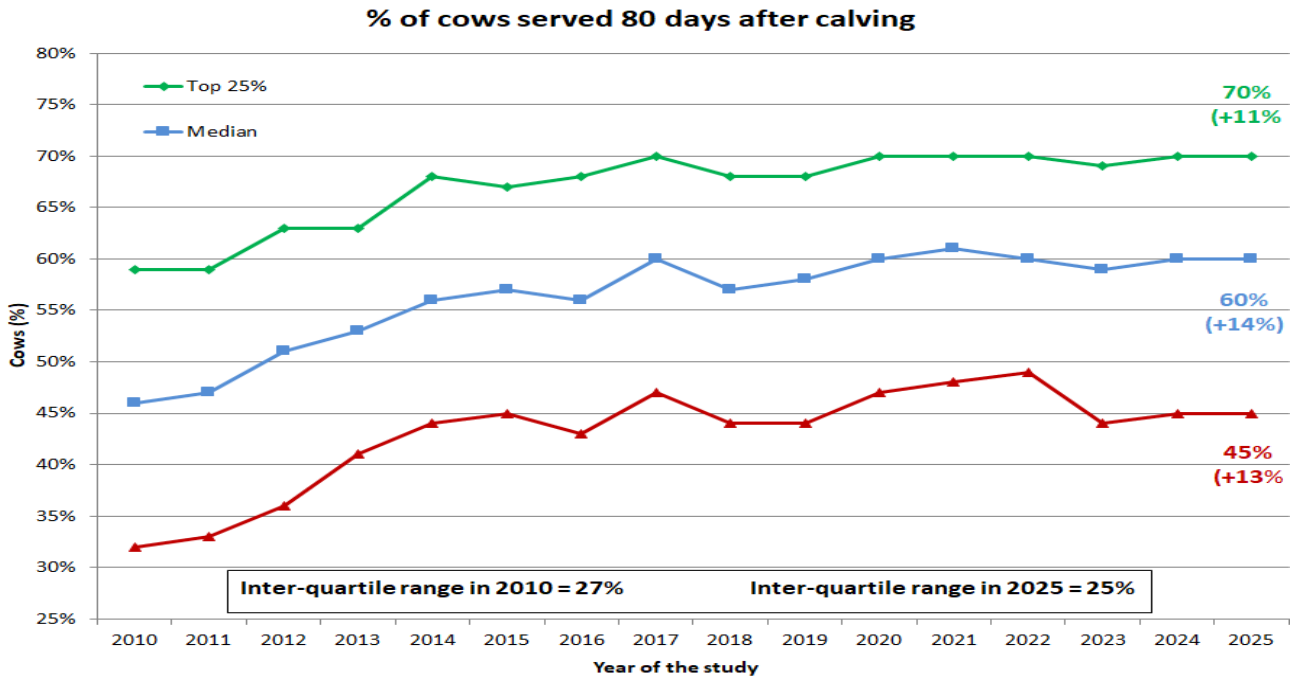


Figure 10. % of cows served 80 days after calving.

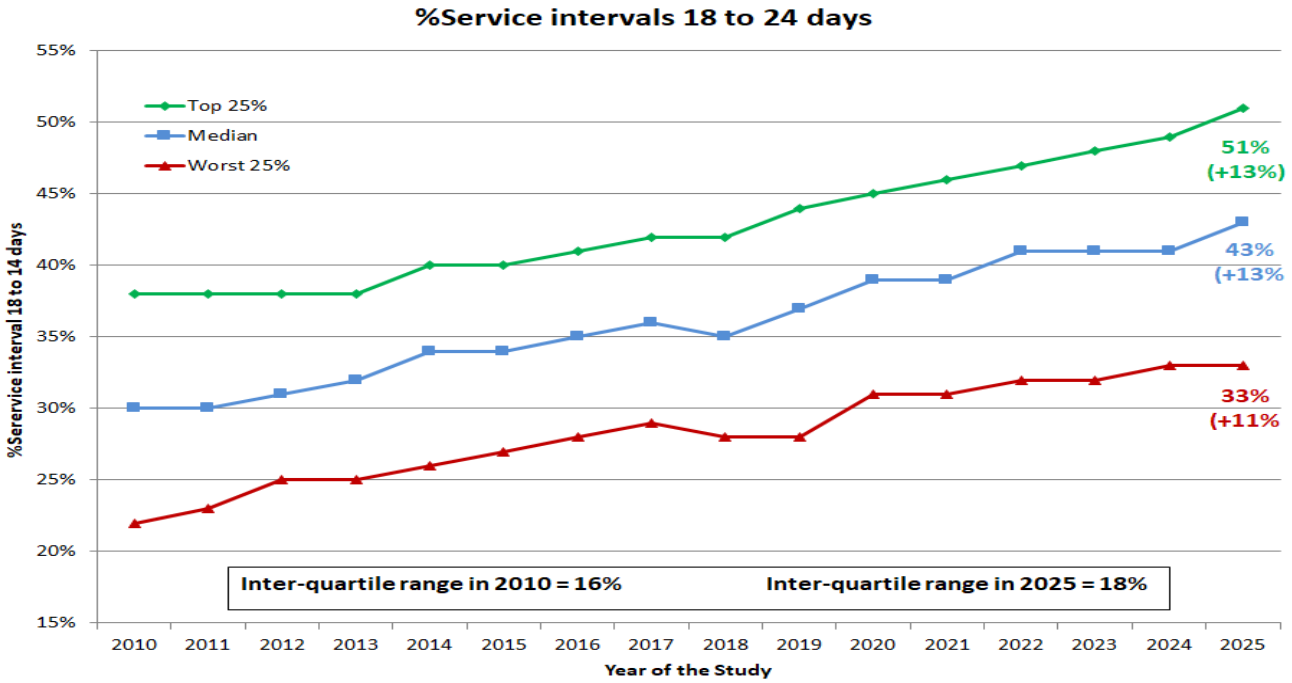


Figure 11. Heat detection, the % of all repeat services that are 18-24 days after the previous service.

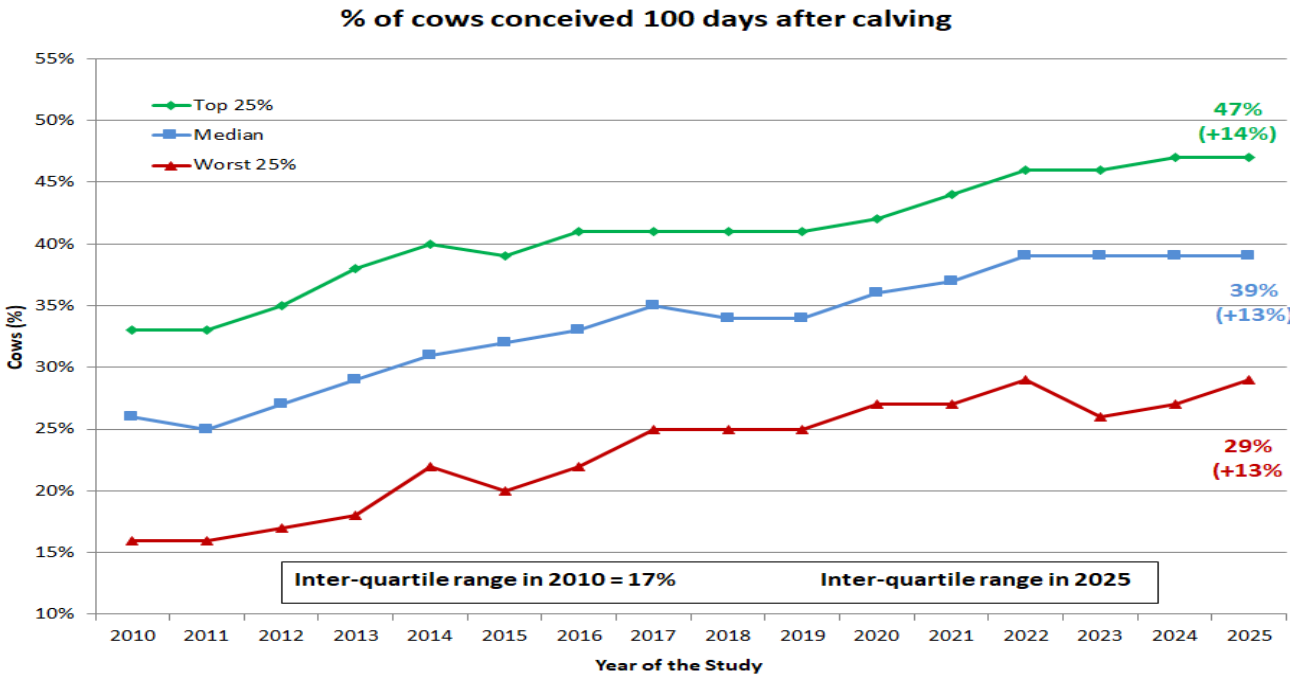


Figure 12. % of cows conceived 100 days after calving.

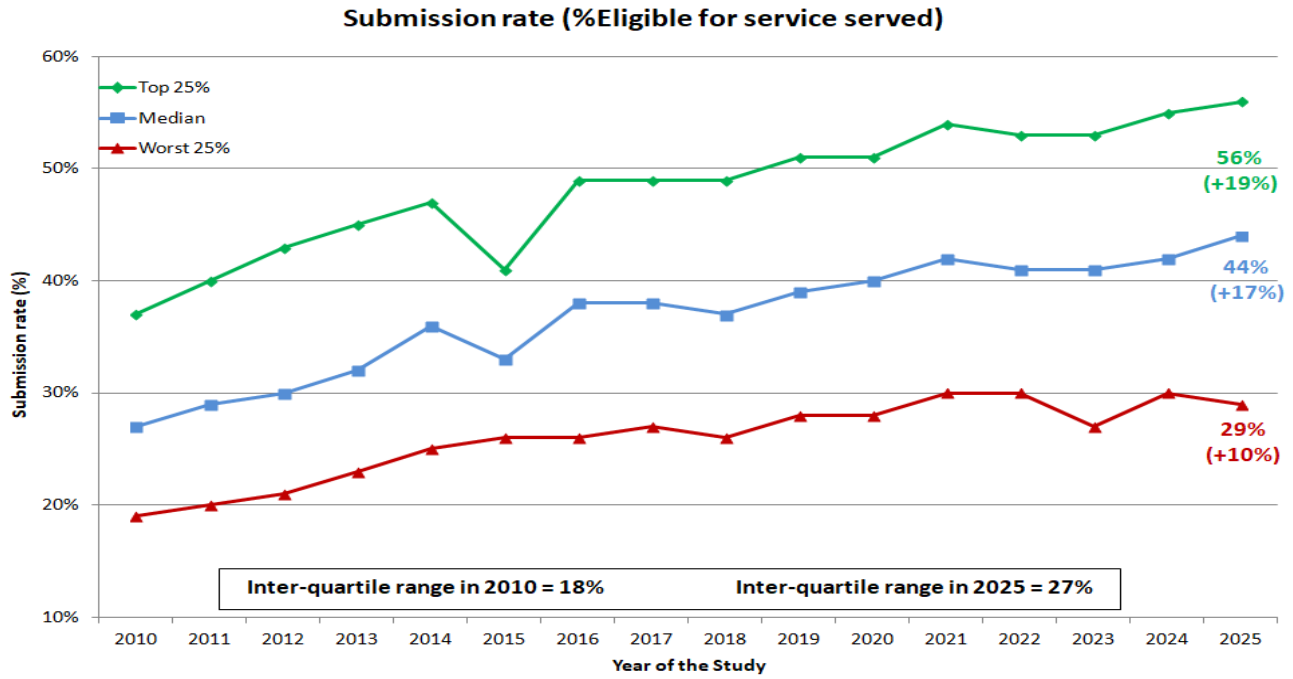


Figure 13. Submission rate, the % of cows eligible for service that were actually served.

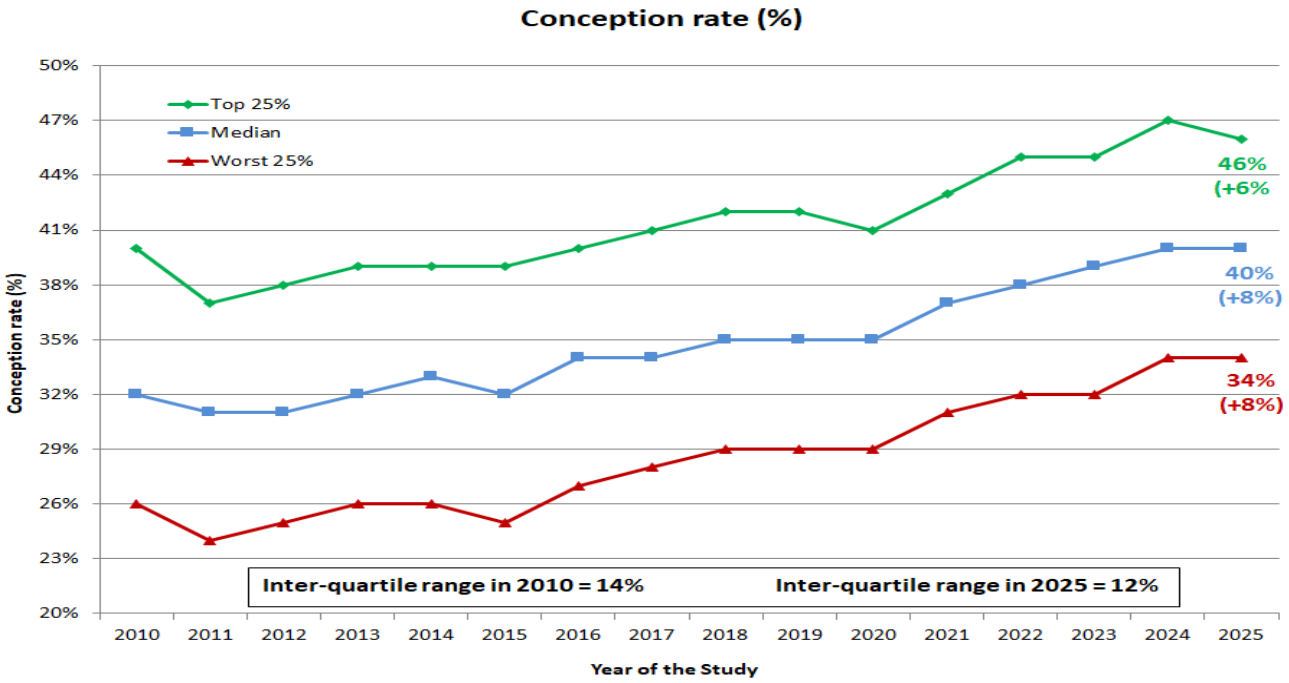


Figure 14. Conception rate (%).

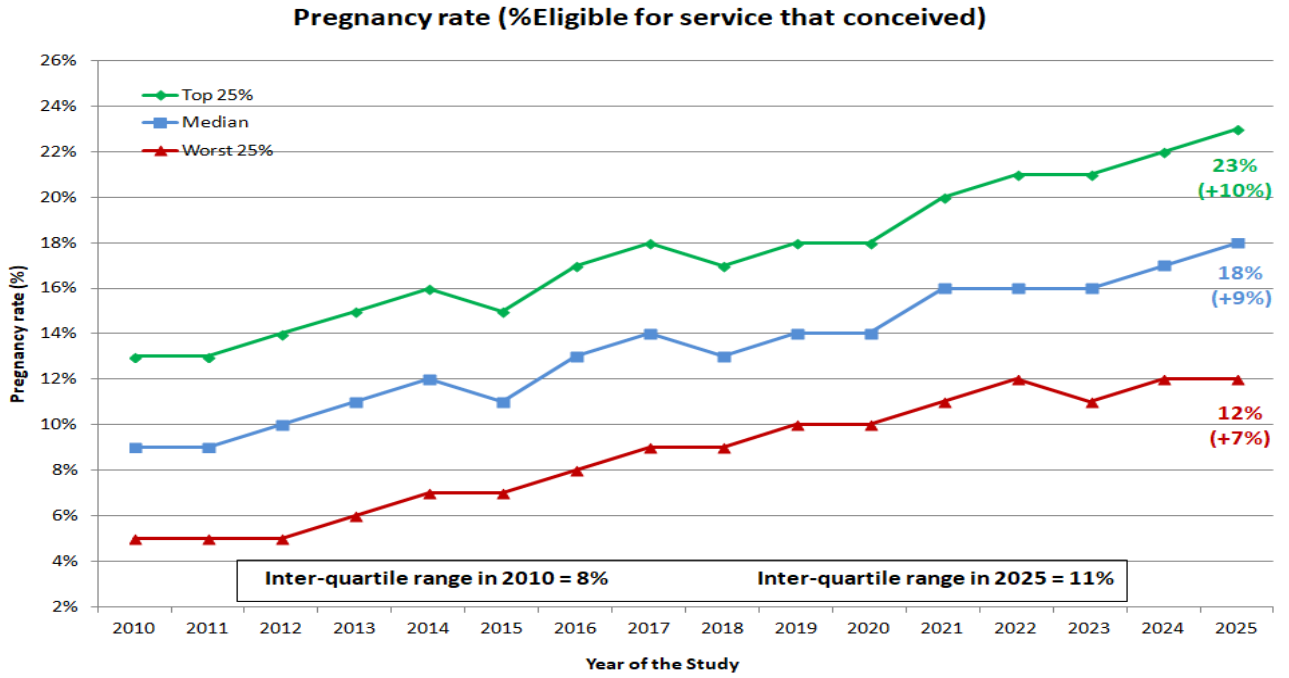


Figure 15. Pregnancy rate, the % of cows eligible for service that conceived.

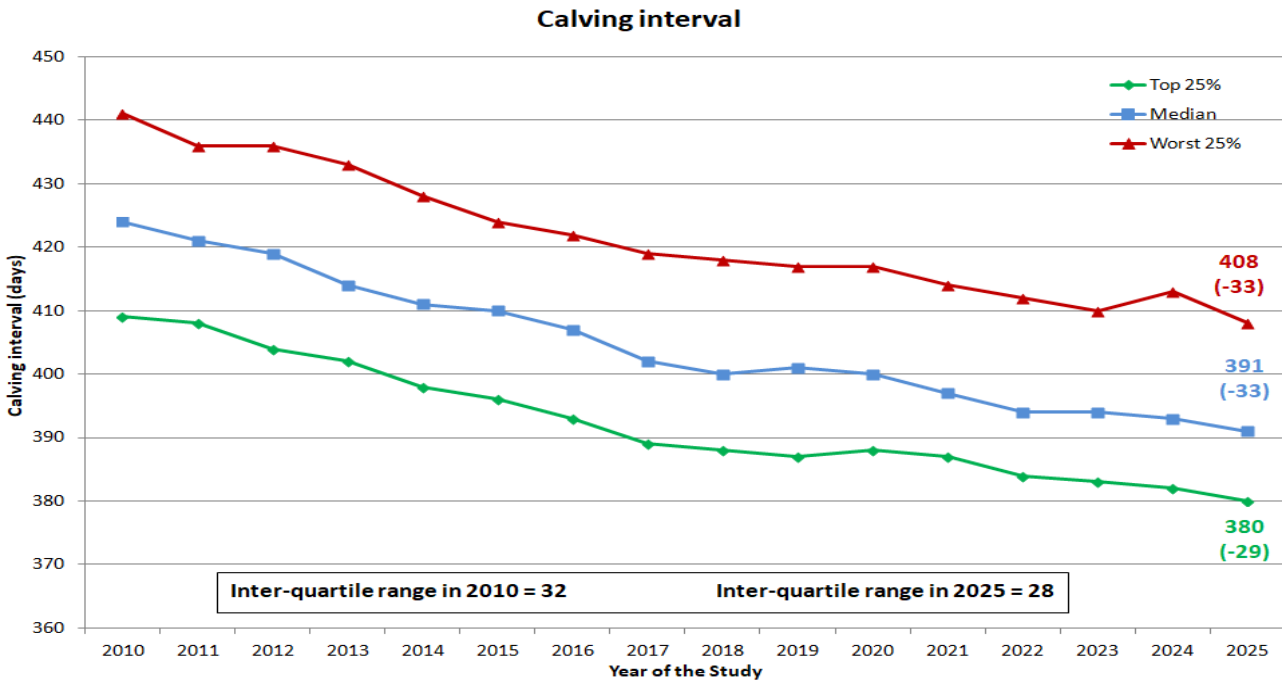


Figure 16. Calving interval (days).

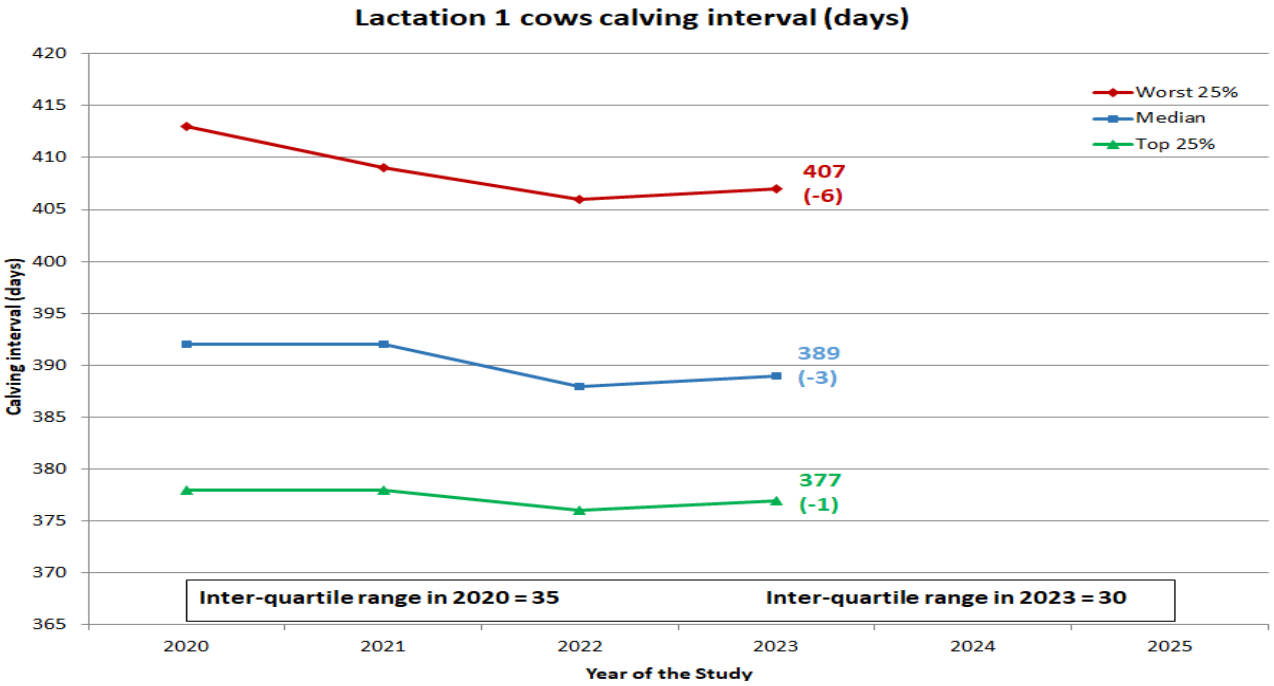


Figure 17. Lactation 1 calving interval (days). Some cows which calved after 1st September 2023 could have conceived and remained in the herd still to recalve when the data for this report was downloaded on 31st August 2025. Therefore more time is needed before this KPI can be correctly calculated including cows with longer calving intervals. Hence, to avoid follow-up bias, the reporting of this KPI ends at 2023.

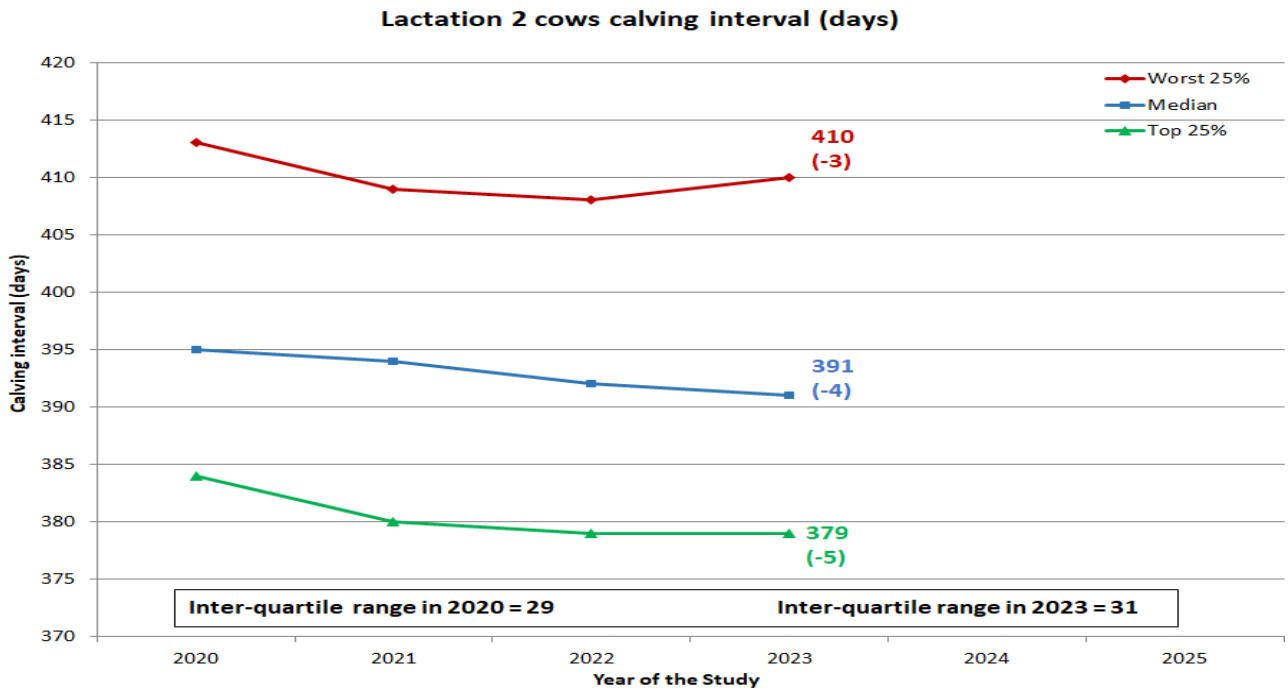


Figure 18. Lactation 2 calving interval (days). Some cows which calved after 1st September 2023 could have conceived and remained in the herd still to recalve when the data for this report was downloaded on 31st August 2025. Therefore more time is needed before this KPI can be correctly calculated including cows with longer calving intervals. Hence, to avoid follow-up bias, the reporting of this KPI ends at 2023.

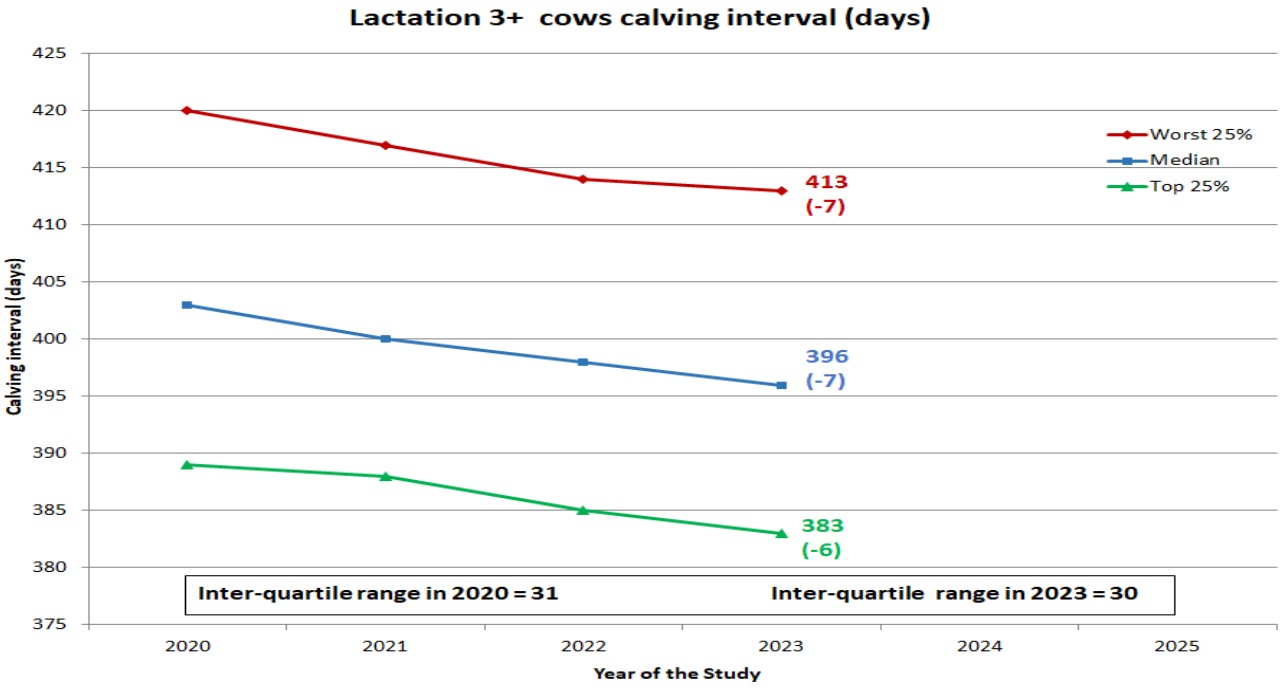


Figure 19. Lactation 3+ calving interval (days). Some cows which calved after 1st September 2023 could have conceived and remained in the herd still to recalve when the data for this report was downloaded on 31st August 2025. Therefore more time is needed before this KPI can be correctly calculated including cows with longer calving intervals. Hence, to avoid follow-up bias, the reporting of this KPI ends at 2023.

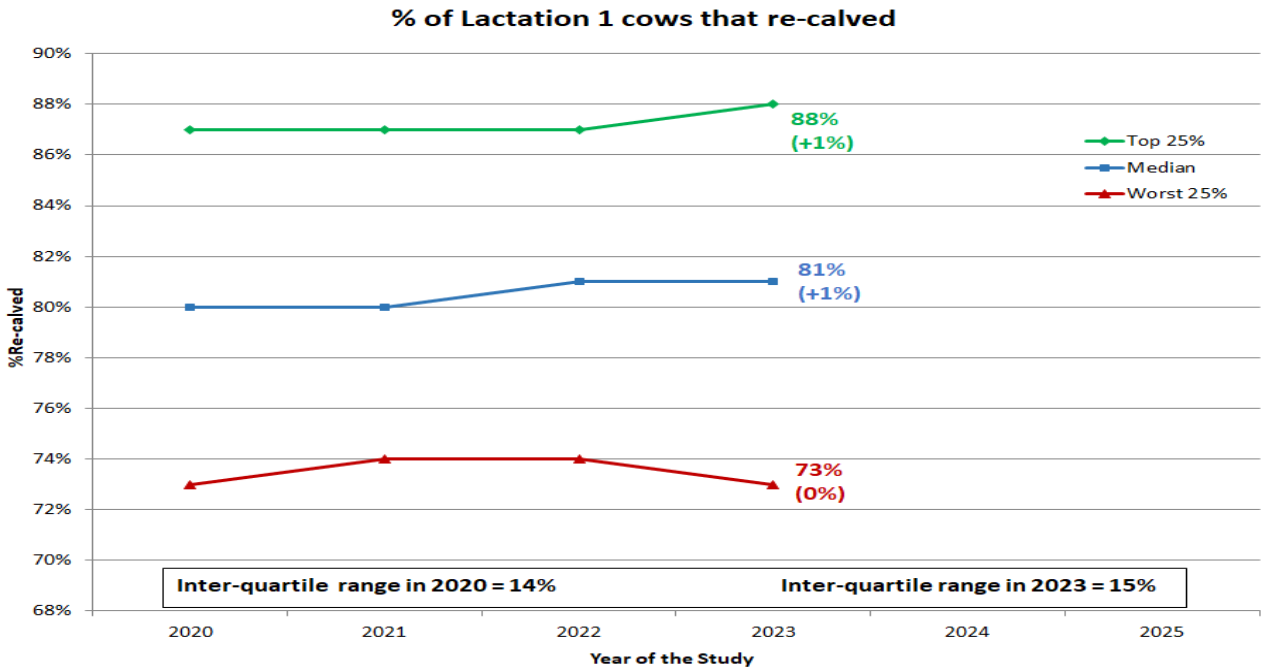


Figure 20. % of lactation 1 cows that re-calved. Some cows which calved after 1st September 2023 could have conceived and remained in the herd still to recalve when the data for this report was downloaded on 31st August 2025. Therefore more time is needed before this KPI can be correctly calculated. Hence, to avoid follow-up bias, the reporting of this KPI ends at 2023.

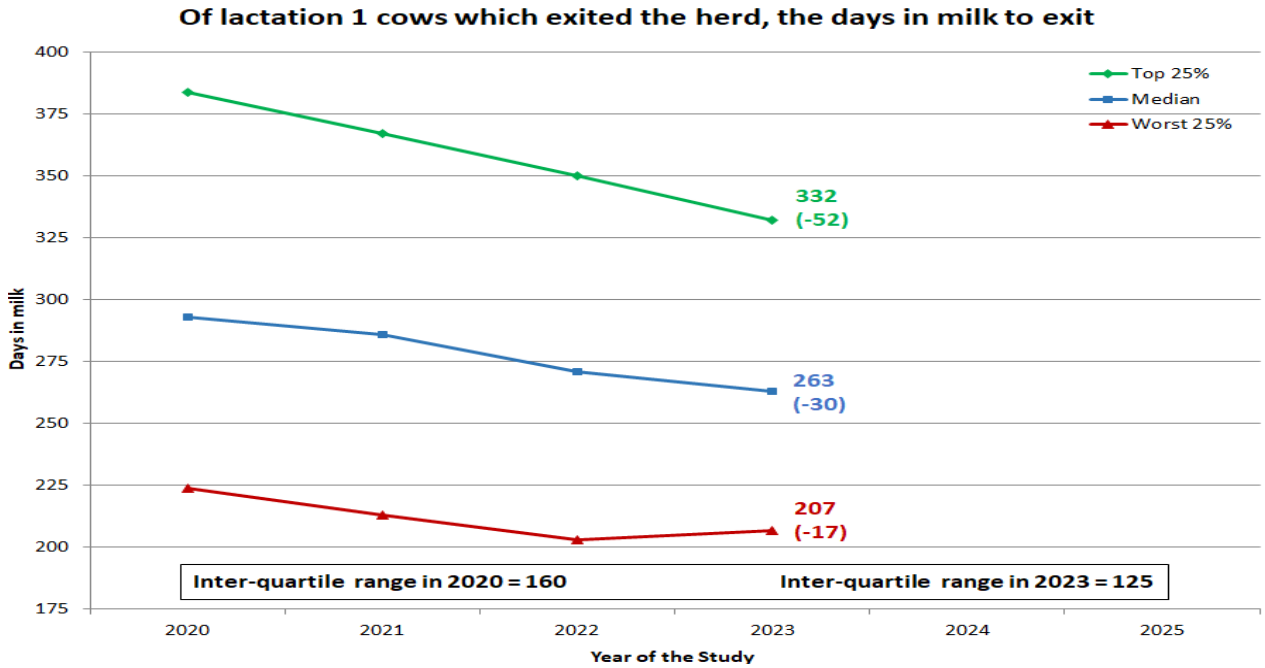


Figure 21. Of lactation 1 cows which exited the herd, the days in milk to exit. Some cows which calved after 1st September 2023 could yet to have recalved or exited the herd when the data for this report was downloaded on 31st August 2025. Therefore more time is needed before this KPI can be correctly calculated. Hence, to avoid follow-up bias, the reporting of this KPI ends at 2023.

5.3 Milk production

After a slight decline in milk yields from 2022 to 2024, milk production returned to 2021 levels. In 2025, the median lifetime milk/cow/day was 13.1 kg, 305-day milk yield was 9,136 kg and milk/cow/year was 8,962 kg. However, the % of first-lactation cows producing ≤75% of mature cows (lactation 3+) 305-day milk yields increased from 27% in 2020 to 33% in 2025 among half of herds. This trend has been driven by trends in lactation-level milk yields.

Since 2020, the median 305-day milk yield for first lactation cows has reduced by 46 kg. Over the same period, the yield decreased by 10 kg for second lactations cows and increased by 349 kg and 449 kg for cows in their third and fourth or higher lactation, respectively. Meanwhile, average milk fat has steadily increased from 4.03% (2016) to 4.30 (2025). Average milk protein has gradually increased by a smaller increments from 3.26% (2016) to 3.38% (2025). Combined fat and protein yield per year has increased in-line with milk yield trends from 604 kg (2016) to 668 kg (2025).

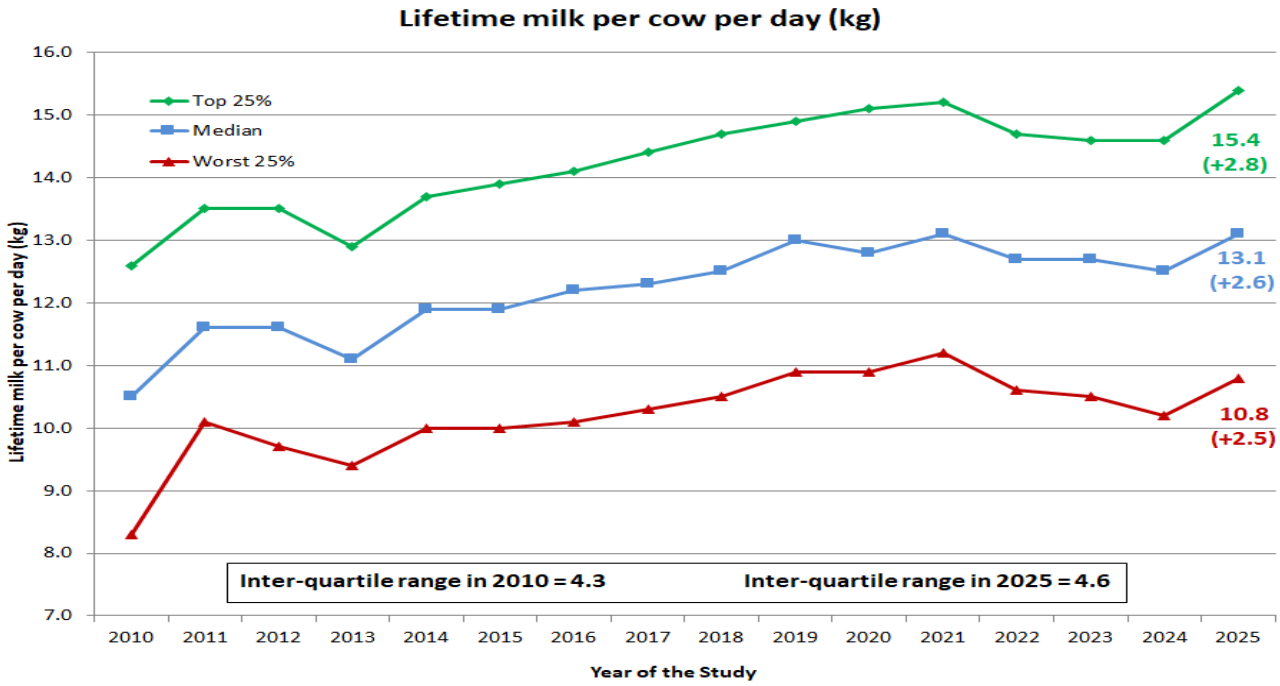


Figure 23. Lifetime milk per cow per day (kg), where lifetime is defined as the period from birth to exit (as distinct from productive lifetime, which is measured from first calving to exit).

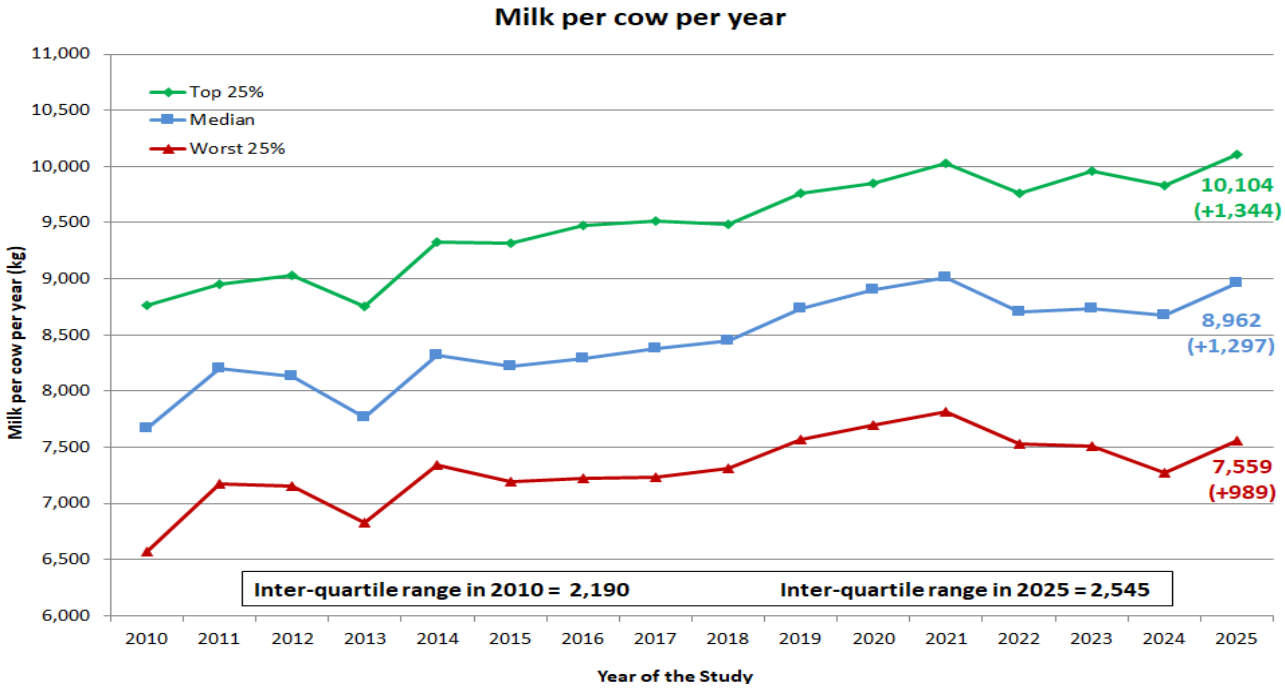


Figure 24. Milk per cow per year (kg).

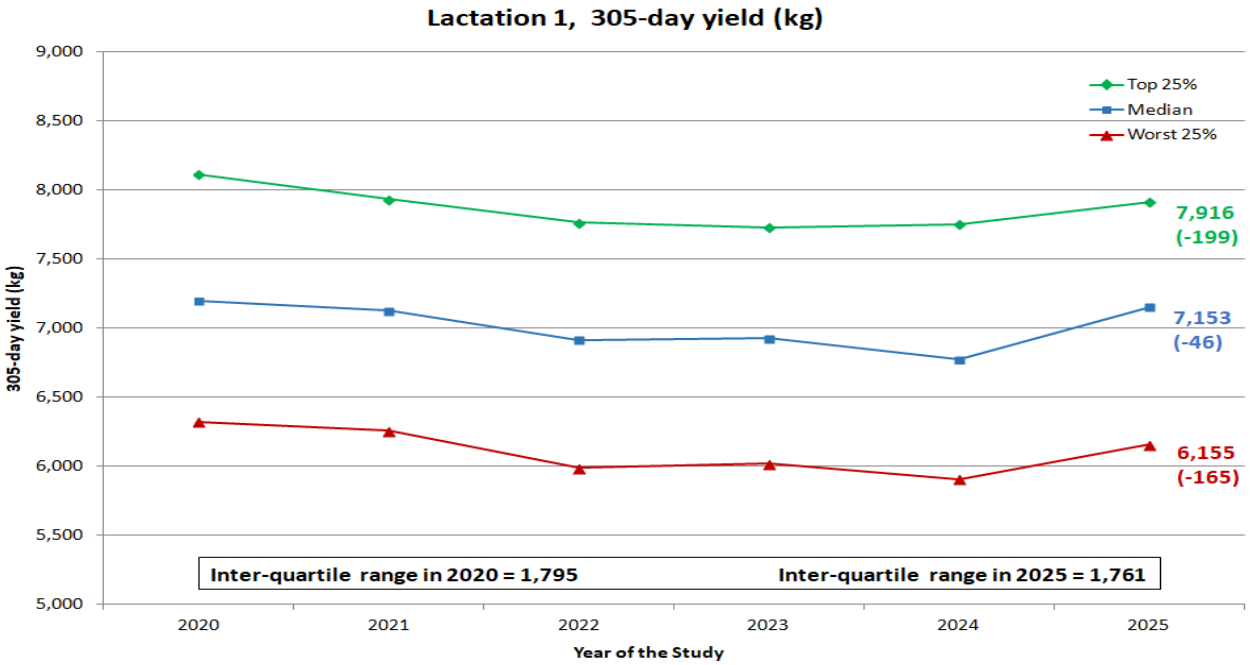


Figure 25. Lactation 1 cows 305-day milk yield.

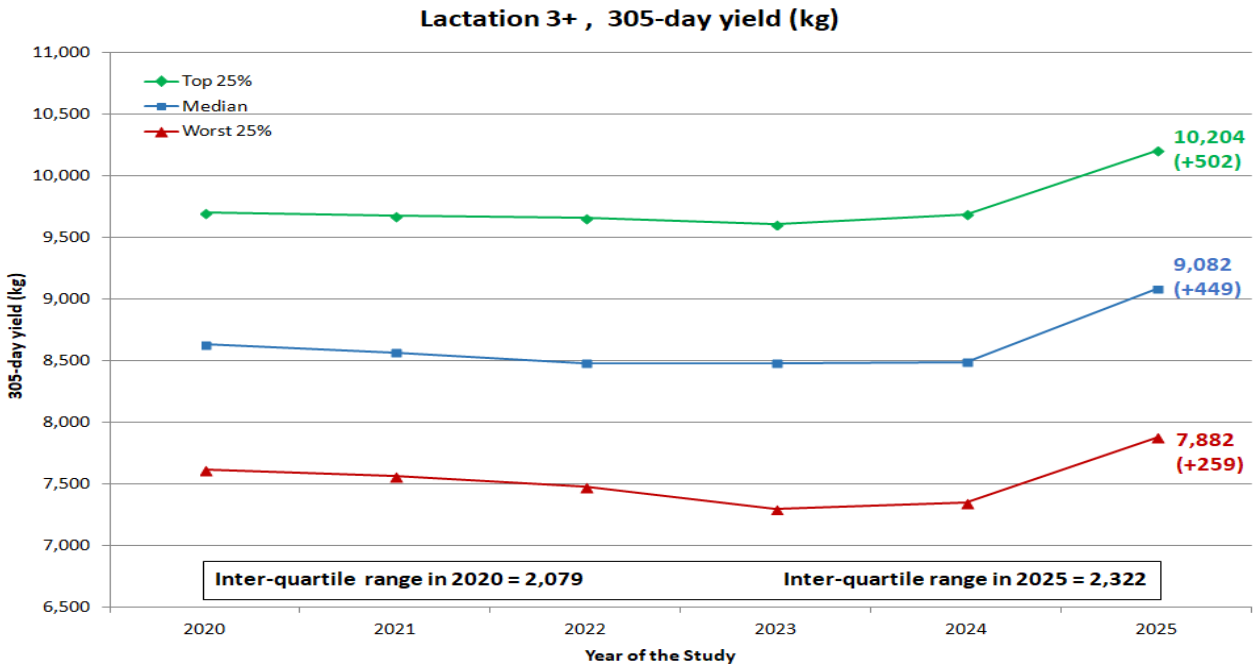


Figure 26. Lactation 3+ cows 305-day milk yield.

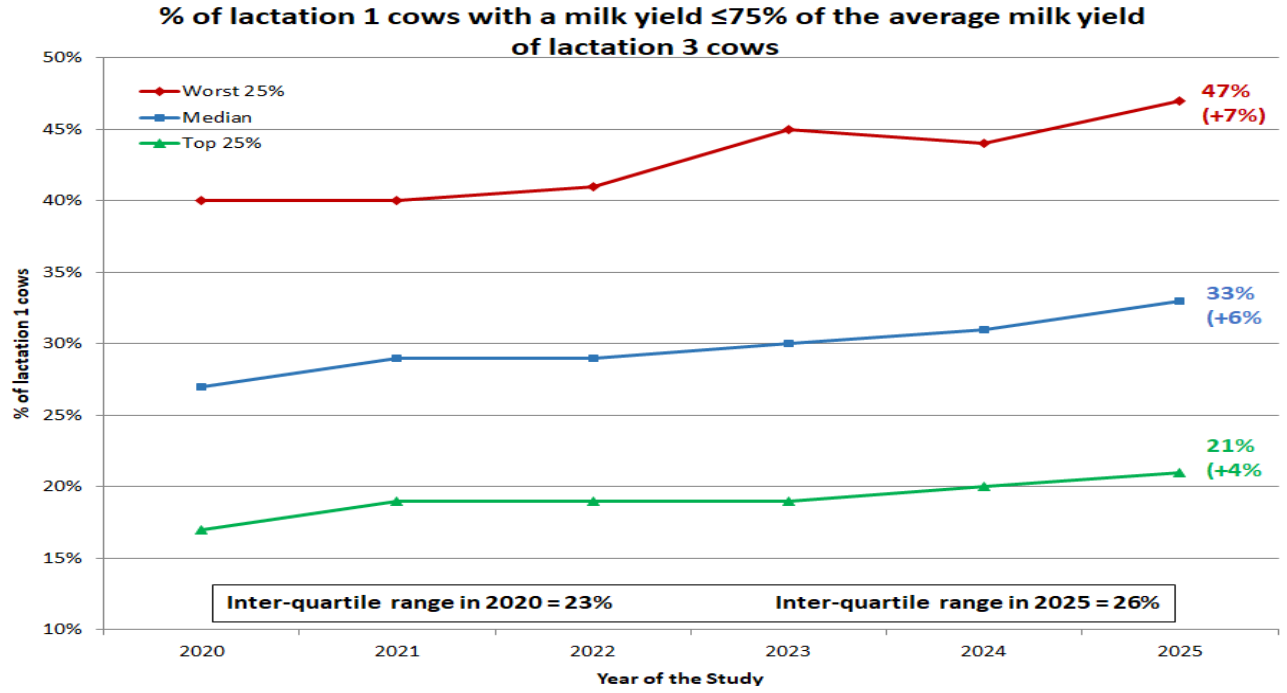


Figure 27. When comparing the 305-day milk yields for lactation 1 and 3 cows, the % of lactation 1 cows with a milk yield ≤75% of the average milk yield of lactation 3 cows.

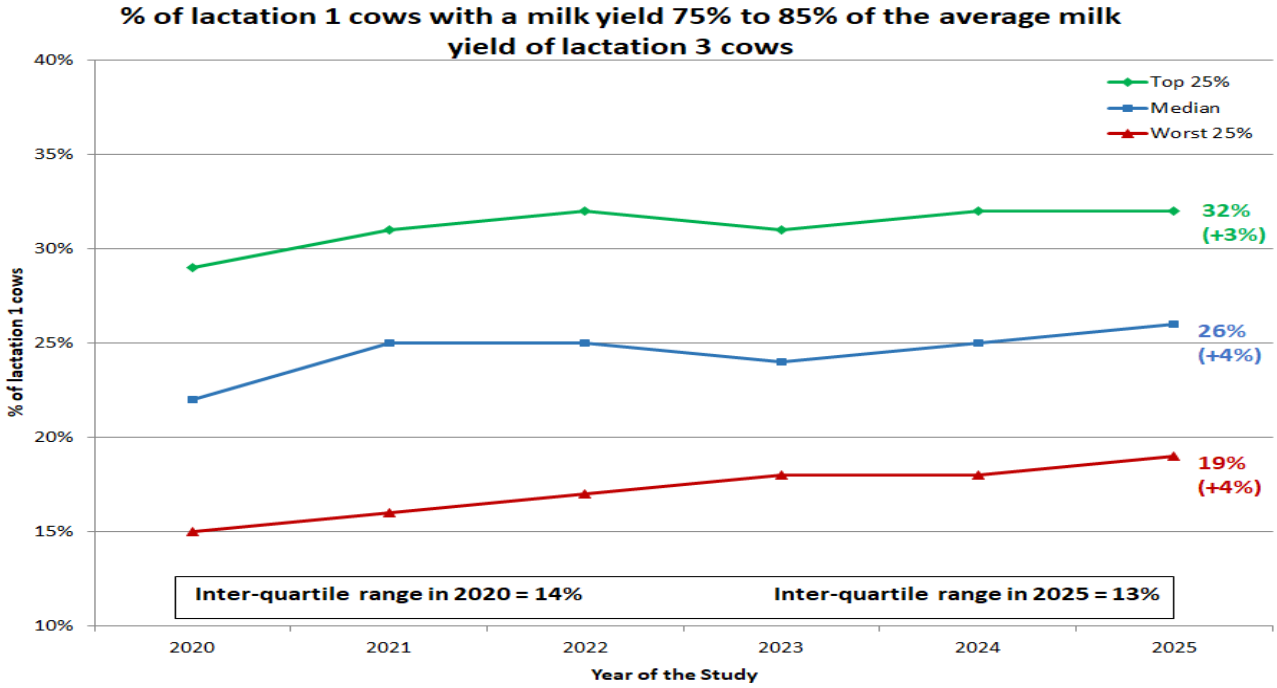


Figure 28. When comparing the 305-day milk yields for lactation 1 and 3 cows, the % of lactation 1 cows with a milk yield 75% to 85% of the average milk yield of lactation 3 cows.

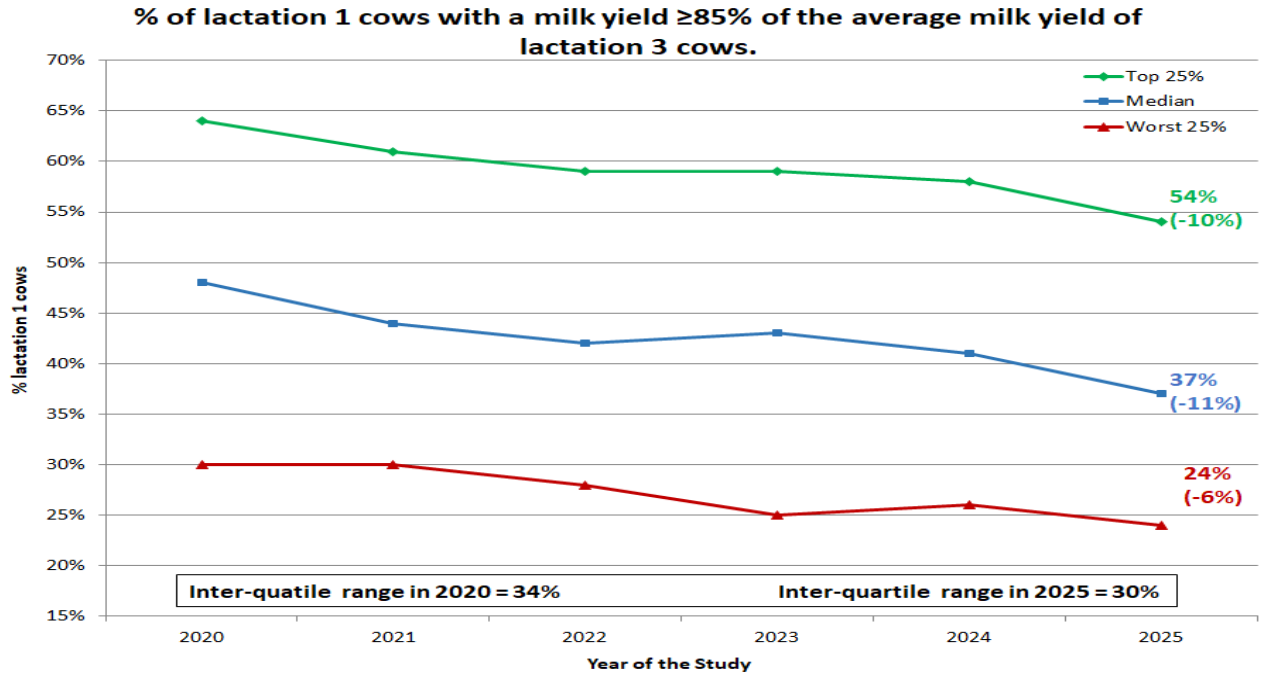


Figure 29. When comparing the 305-day milk yields for lactation 1 and 3 cows, the % of lactation 1 cows with a milk yield ≥85% of the average milk yield of lactation 3 cows.

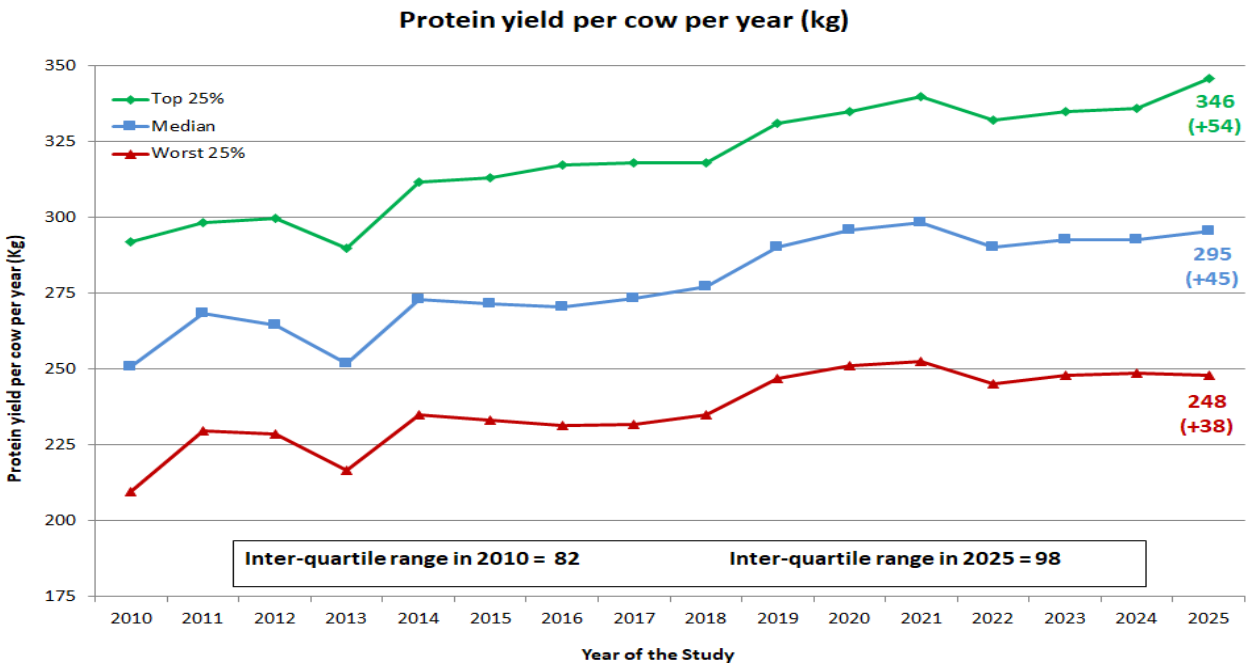


Figure 30. Protein yield per cow per year (kg).

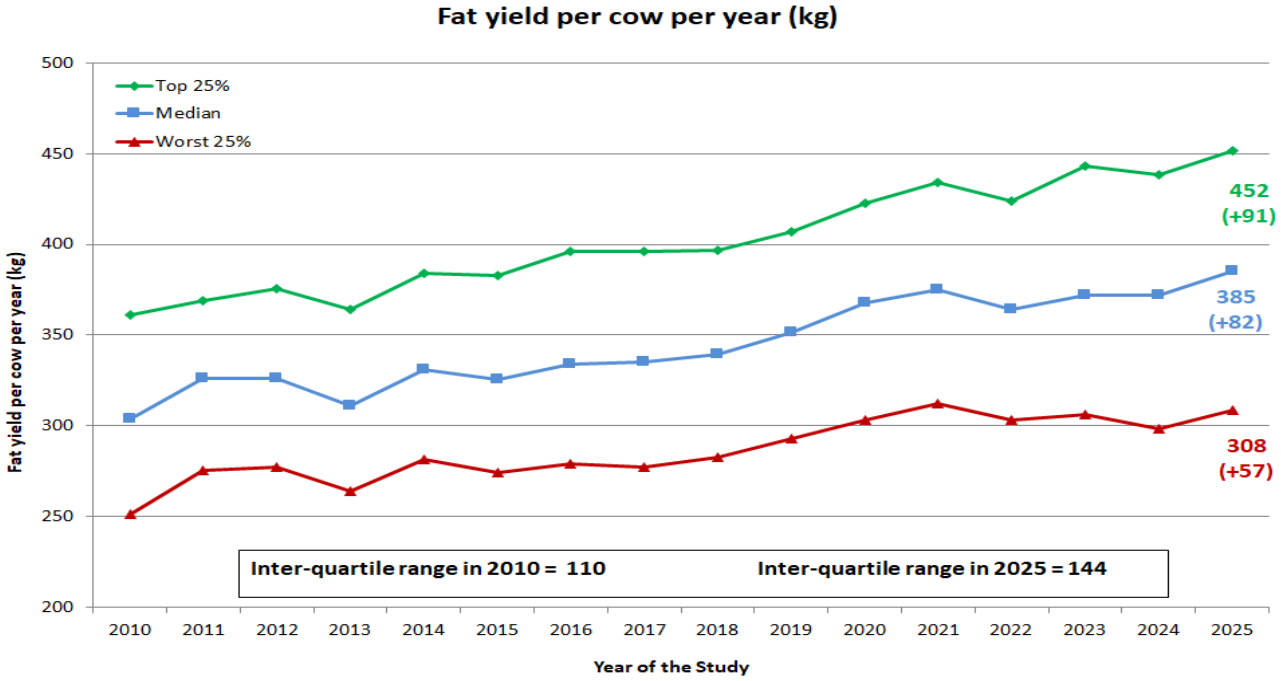


Figure 31. Fat yield per cow per year (kg).

5.4 SCC and Mastitis

Similarly to fertility KPIs, SCC and mastitis related KPIs have undoubtedly improved since 2010, but the trends in many KPIs have plateaued. The median average herd SCC has decreased from 185,000 cells/ml (2016) to 160,000 cells/ml (2025), after slight increases to 168,000 cells/ml and 171,000 cells/ml in 2023 and 2024, respectively. The median % of milk samples with an SCC ≥ 200,000 cells/ml has stayed at 15% to 16% since 2021, while those with an SCC ≥ 500,000 cells/ml have remained at 6% to 7% since 2015. Encouragingly, the median % of cows dried off with no SCC samples ≥ 200,000 cells/ml has continued to improve from 41% (2016) to 53% (2025) and median number of mastitis cases per year per 100 cows has decreased from 36 (2016) to 19 (2025).

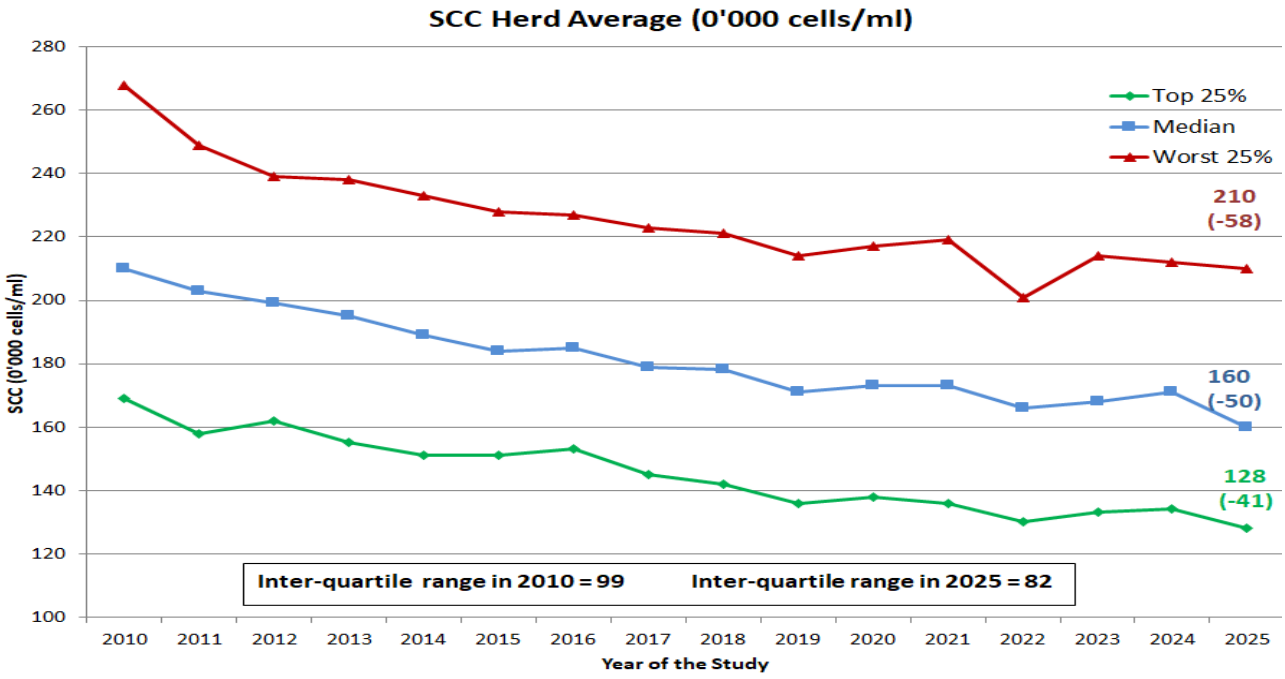


Figure 32. Herd average SCC ('000 cells/ml).

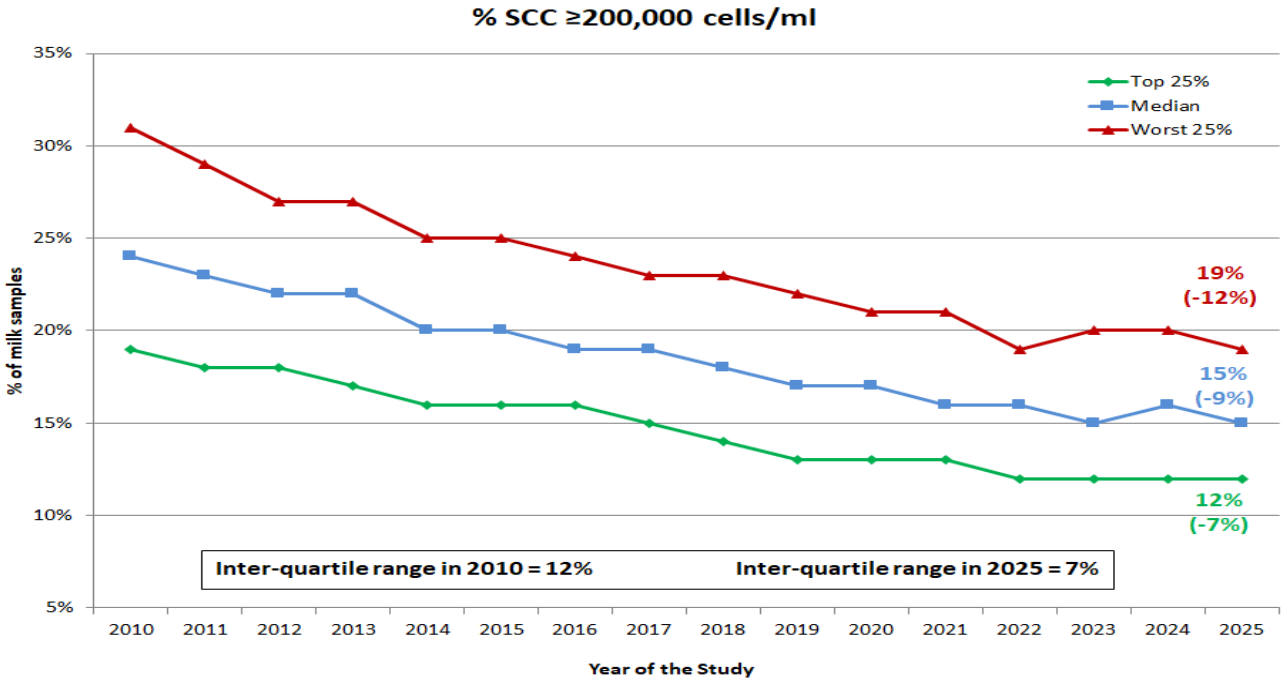


Figure 33. % of milk samples with a SCC ≥ 200'000 cells/ml.

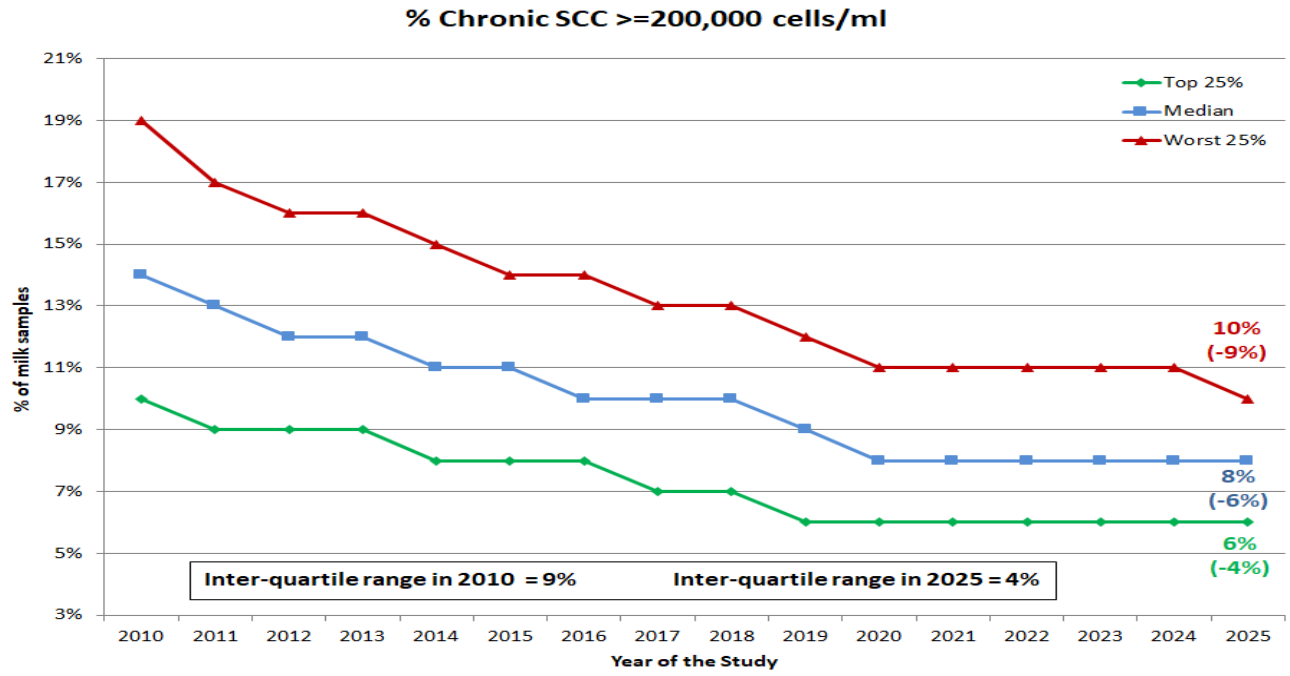


Figure 34. % of milk samples originating from chronic (repeat) high SCC cows.

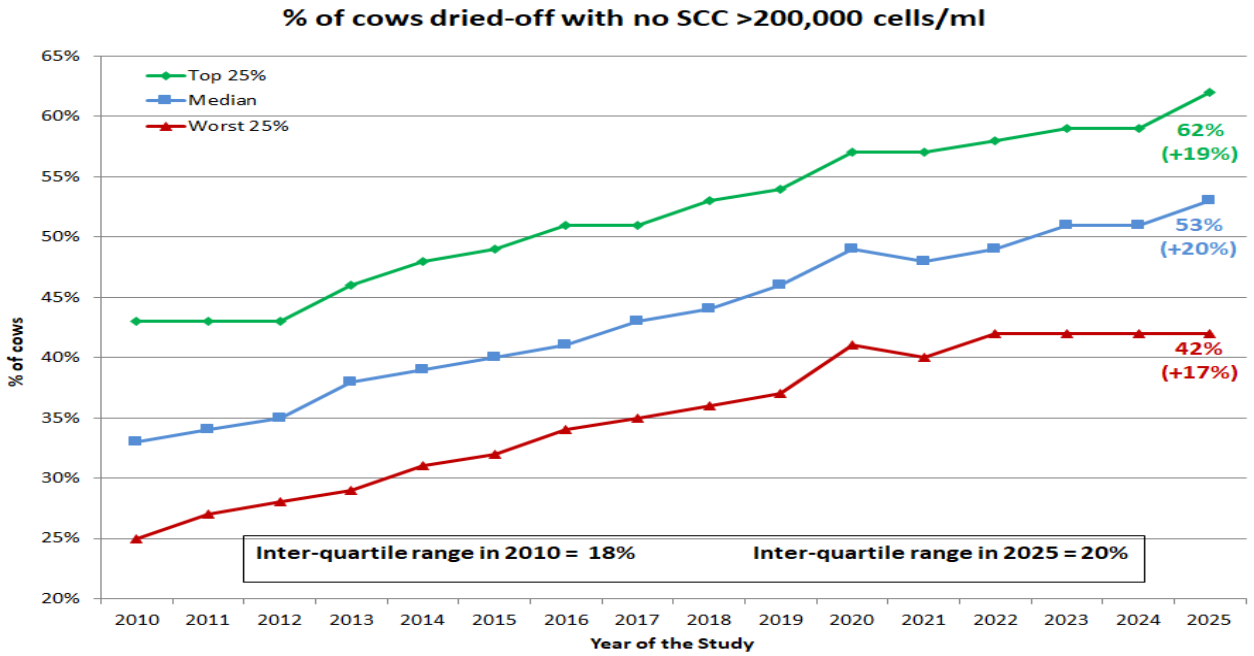


Figure 35. % of cows dried-off with no SCC > 200,000 cells/ml in the lactation.

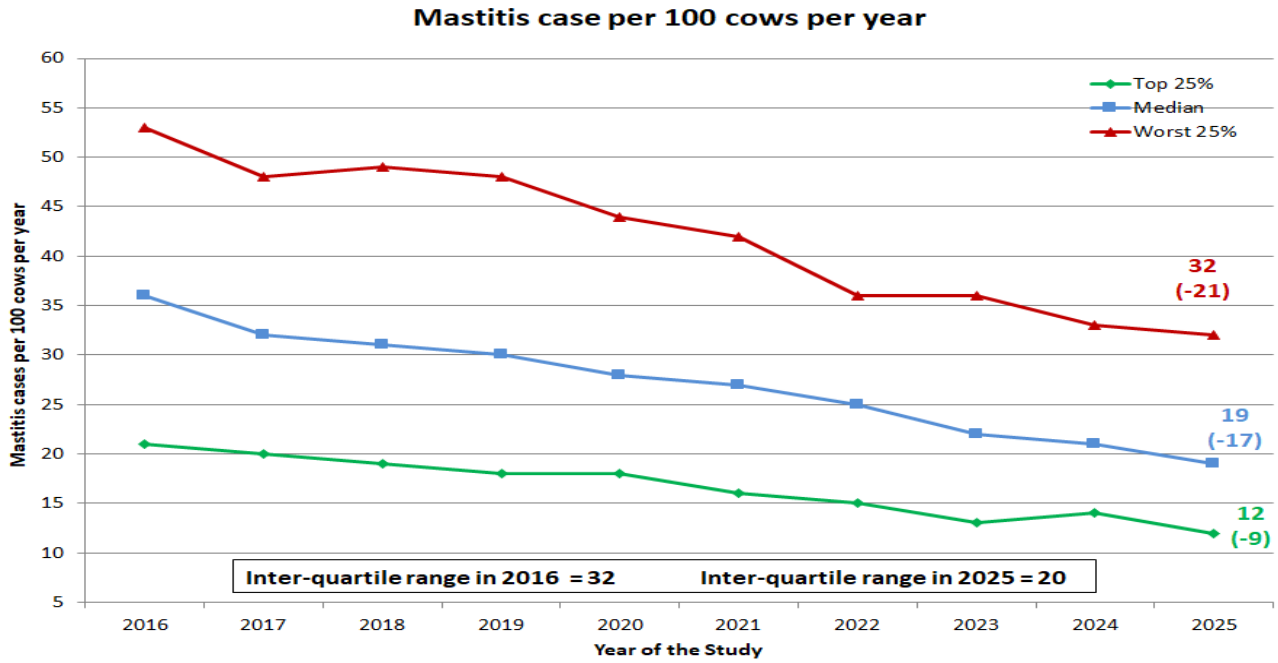


Figure 36. Mastitis rate (cases / 100 cows in milk / year) – mastitis groups of herds since 2016.

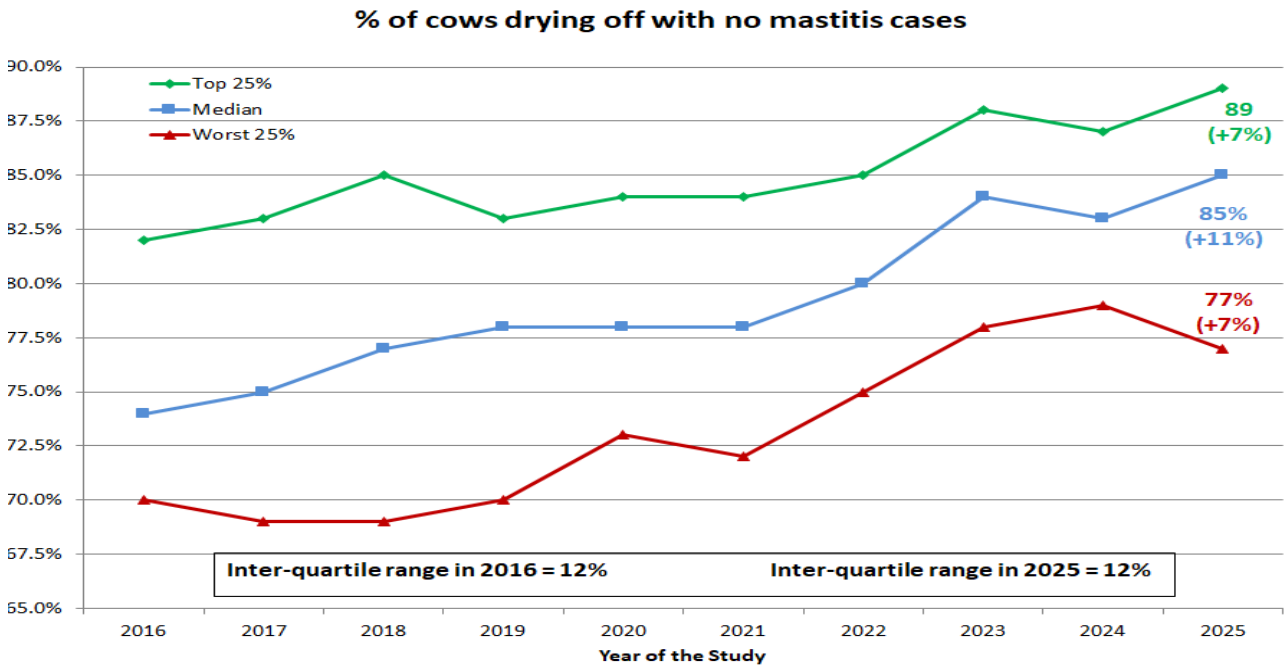


Figure 37. % of cows dried-off with no mastitis cases.

6.0 Changes in KPIs between 2010 and 2025

Since the initial study in 2010, wherever possible the same herds are kept in the sample used each year. If necessary, herds with poorly recorded fertility data and herds no longer recording were replaced with randomly selected new herds. Within the sample of the 2025 study, there remain 77 herds (15%) that have been included in all the 16 studies (2010 to 2025).

Table 2. 2010 and 2025 median values within the 500-herds and the 77 common herds.

	500 herds groups		77 common herds	
Parameter ***Year of the study***	**2010**	**2025**	**2010**	**2025**
A. Exit rate (%)	24%	26%	23%	27%
B. Exit rate in first 100 days of lactation (%)	7%	5%	7%	5%
C(1). Age at exit (years)	6.6	5.8	6.7	5.6
C(2). Age at exit (days)	2,393	2,112	2,446	2,046
E. Age at exit (lactations)	3.9	3.6	4.0	3.6
H. % served by day 80	46%	60%	46%	57%
N. % conceived 100 days after calving	26%	39%	25%	36%
J. Calving to 1st service interval (days)	105	78	102	79
Q. Calving interval (days)	424	391	422	390
G. Age at 1st calving (months)	28.8	26.5	30.0	26.6
O. Conception rate (%)	32%	40%	31%	39%
K. % service intervals at 18-24 days	30%	43%	33%	44%
L. % service intervals >50 days	32%	18%	29%	17%
M. % eligible for service that served	27%	44%	29%	42%
P. % eligible for service that conceived	9%	18%	9%	17%
U. Lifetime milk / cow / day (kg)	10.5	13.1	10.6	12.9
V. Milk / cow / year (kg)	7,665	8,962	8,249	8,659
W. Average Protein (%)	3.27%	3.38%	3.25%	3.36%
X. Average Fat (%)	3.96%	4.30%	3.95%	4.34%
ZF. Average SCC ('000 cells/ml)	210	160	195	161
ZG. % SCC ≥200,000 cells/ml	24%	15%	21%	15%
ZH. % SCC >500,000 cells/ml	9%	6%	8%	6%
ZI. % 1st recording SCC >=200,000 cells/ml	20%	15%	19%	15%
ZJ. % chronic SCC >=200,000 cells/ml	14%	8%	12%	8%
ZK. % dry period cure (High:Low)	74%	78%	75%	78%
ZL. % dry period protection (Low:Low)	84%	87%	84%	86%
ZM. % low SCC at end of previous lactation	60%	80%	66%	79%

7.0 The practical use of KPIs in InterHerd+

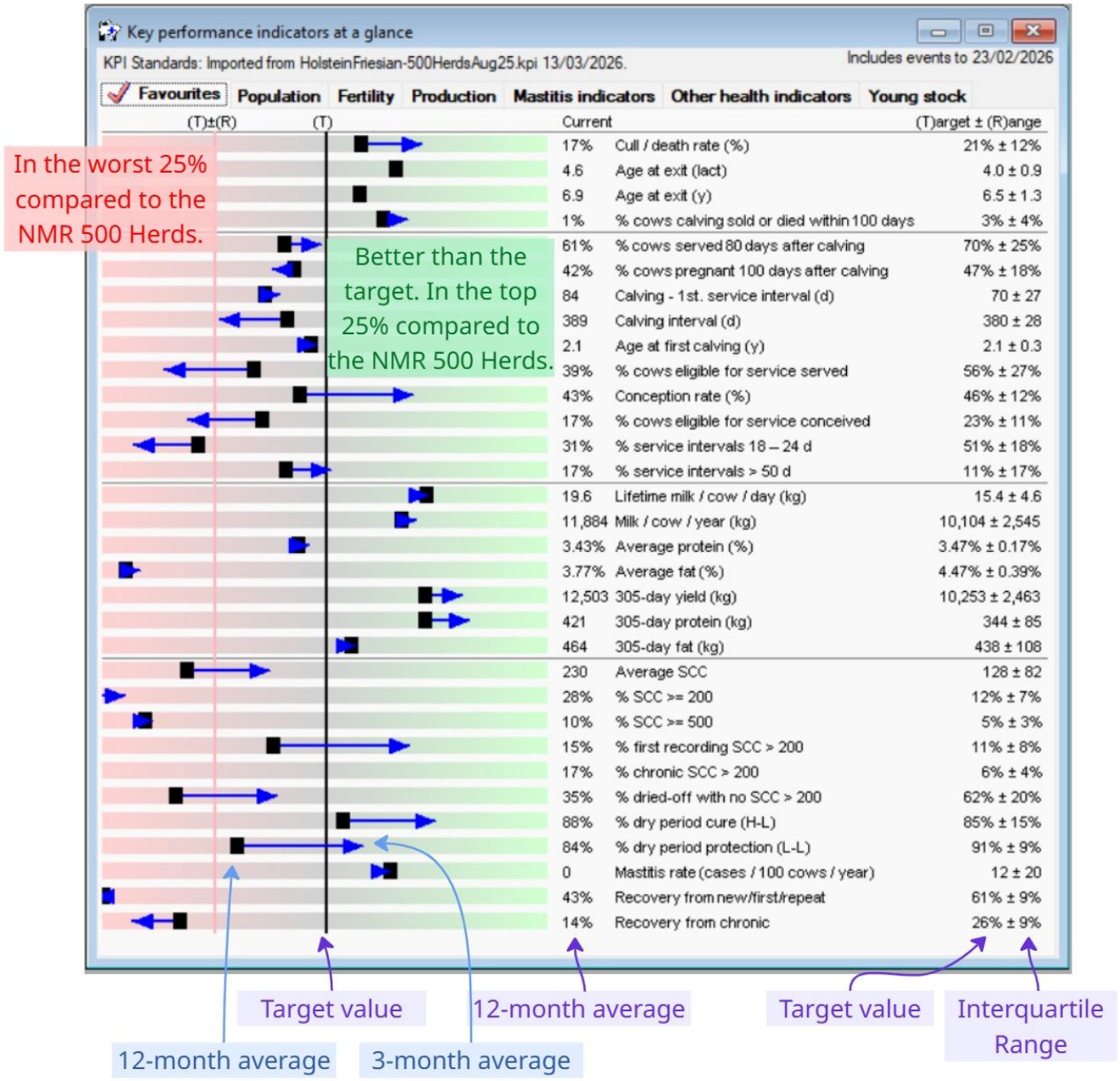
The 500-herd KPI report is designed as a management tool for farmers, vets and advisers, to benchmark herd progress and set targets alongside those in the report. The combination of parameters relating to production, fertility and health, emphasizes the dynamic nature of dairy production. Many herds are excellent in one area of production, fertility or health but seldom in all.

A breakdown of the KPI report in InterHerd+

- **The value** displayed to the left of each parameter title (under the heading "Current") represents the herd's performance over the last year. It is the rolling **12-month average** for that parameter.
- To the right of each listed parameter is a **target value** and a **range**. The target value is set by the best quartile boundary in the 500 herds (top 25%). The range is the difference between the best quartile boundary and the worst quartile boundary.
- In the graphic on the left side of the report, the **target value** is represented by the **vertical black line**. The area to the right hand side is shaded **green** to denote a performance level that is **better than the target value**. Herds with values to the right of this line rank with the best 25% of the 500 herds.
- Left of the target line is shaded **red** denoting performance that is **worse than the target value**.
- The **worst quartile boundary** is represented by the **vertical red line**. Herds with values to the left of this line rank with the worst 25% of the 500 herds.
- Values between the black and red lines are worse than the target but better than the worst 25% of the 500 herds.

The positions of the black square and blue arrow show how the current herd is performing for each parameter relative to the specified target values.

- The **black square** is the **12-month rolling average** value for that parameter.
- The **blue arrow** head is the **3-month rolling average** value for that parameter. This shorter-term average shows in which direction the parameter is moving over the recent quarter year (to the right = improving; to the left = getting worse). However, it is important to remember that there can be seasonal variation for some parameters and the values for these can swing left and right through the course of a year.


Key performance indicators at a glance
KPI Standards: Imported from HolsteinFriesian-500HerdsAug25.kpi 13/03/2026.
Includes events to 23/02/2026
Favourites
Population
Fertility
Production
Mastitis indicators
Other health indicators
Young stock
(T)±(R)
(T)
Current
(T)arget ± (R)ange
17% Cull / death rate (%) 21% ± 12%
4.6 Age at exit (lact) 4.0 ± 0.9
6.9 Age at exit (y) 6.5 ± 1.3
1% % cows calving sold or died within 100 days 3% ± 4%
61% % cows served 80 days after calving 70% ± 25%
42% % cows pregnant 100 days after calving 47% ± 18%
84 Calving - 1st. service interval (d) 70 ± 27
389 Calving interval (d) 380 ± 28
2.1 Age at first calving (y) 2.1 ± 0.3
39% % cows eligible for service served 56% ± 27%
43% Conception rate (%) 46% ± 12%
17% % cows eligible for service conceived 23% ± 11%
31% % service intervals 18 – 24 d 51% ± 18%
17% % service intervals > 50 d 11% ± 17%
19.6 Lifetime milk / cow / day (kg) 15.4 ± 4.6
11,884 Milk / cow / year (kg) 10,104 ± 2,545
3.43% Average protein (%) 3.47% ± 0.17%
3.77% Average fat (%) 4.47% ± 0.39%
12,503 305-day yield (kg) 10,253 ± 2,463
421 305-day protein (kg) 344 ± 85
464 305-day fat (kg) 438 ± 108
230 Average SCC 128 ± 82
28% % SCC >= 200 12% ± 7%
10% % SCC >= 500 5% ± 3%
15% % first recording SCC > 200 11% ± 8%
17% % chronic SCC > 200 6% ± 4%
35% % dried-off with no SCC > 200 62% ± 20%
88% % dry period cure (H-L) 85% ± 15%
84% % dry period protection (L-L) 91% ± 9%
0 Mastitis rate (cases / 100 cows / year) 12 ± 20
43% Recovery from new/first/repeat 61% ± 9%
14% Recovery from chronic 26% ± 9%
In the worst 25% compared to the NMR 500 Herds.
Better than the target. In the top 25% compared to the NMR 500 Herds.
Target value
12-month average
Target value
Interquartile Range
12-month average
3-month average

8.0 KPI Definitions

Table 3. KPI definitions.

Parameter	Description
Herd demographics/longevity	
A. Exit rate (%)	The number of cows dying or culled during the 12 month period expressed as a percentage of the average cow population for the same 12 month period.
B. Exit rate in the first 100 days after calving (%)	The percentage of heifers/cows calving during the 12 month period that exit within 100 days after calving.
C(1). Age at exit (years)	The average age (in days) of cows culled/died in the analysis period, divided by 365.24
C(2). Age at exit (days)	The average age (in days) of cows culled/died in the analysis period.
D. Productive life (days)	The difference between age at first calving and age at exit (in days).
E. Age at exit (lactations)	The average number of lactations completed by cows which exited the herd in the analysis period.
F(1). % of lactation 1 cows	The number of cows labelled as lactation 1 cows divided by the total number of milking cows within the herd.
F(2). % of lactation 2 cows	The number of cows labelled as lactation 2 cows divided by the total number of milking cows within the herd.
F(3). % of lactation 3 cows	The number of cows labelled as lactation 3 cows divided by the total number of milking cows within the herd.
F(4). % of lactation 4+ cows	The number of cows labelled as lactation 4+ cows divided by the total number of milking cows within the herd.
Fertility	
G. Age at 1st calving (months)	The age at first calving for all cows calving for the first time during the analysis period.
H. % of cows served by day 80	The percentage of cows reaching the 80th day after calving that have been served at least once.
I. % of lactation 1 cows served by day 100	The percentage of lactation 1 cows reaching the 100th day after calving that have been served at least once.
J. Calving to 1st service interval (days)	The average days between calving and 1st service for all cows served for the first time in a lactation during the analysis period.
K. % service intervals at 18-24 days (heat detection)	The percentage of all service intervals for cows returning to service during the analysis period that are between 18 and 24 days (equating to one oestrous cycle after the previous service).
L. % service intervals >50 days	The percentage of all service intervals for cows returning to service during the analysis period that are over 50 days.
M. % of cows eligible for service that were served (Submission rate)	The percentage of cows that are eligible for service (42 days+ after calving and not barren or already pregnant) during the analysis period that are served per 21 day (oestrous cycle) period.
N. % of cows conceived 100 days after calving	The percentage of cows reaching 100 days after calving that have conceived.

O. Conception rate (%)	The number of conceptions as a percentage of the total number of services (services to cows culled are included) during the analysis period.
P. % of cows eligible for service that conceived (Pregnancy rate)	The percentage of cows that are eligible for service (42 days+ after calving and not barren or already pregnant) during the analysis period that conceive per 21 day (oestrous cycle) period.
Q. Calving interval (days)	The interval between calvings, in days, for all re-calvings recorded in the analysis period.
R(1). Lactation 1 cows calving intervals (days).	The interval between calvings, in days, for all re-calvings recorded in the analysis period for lactation 1 cows.
R(2). Lactation 2 cows calving intervals (days).	The interval between calvings, in days, for all re-calvings recorded in the analysis period for lactation 2 cows.
R(3). Lactation 2 cows calving intervals (days).	The interval between calvings, in days, for all re-calvings recorded in the analysis period for lactation 3 cows.
S. % of lactation 1 cows re-caved+	The percentage of lactation 1 cows which have recalved within the same herd.
T. Lactation 1 days in milk to exit (days)	Of lactation 1 cows which exited the herd, the days in milk to exit.
Milk production	
U. Lifetime milk / cow/day (kg)	The average of total milk yield divided by age in days (from birth to culling) for cows leaving the herd during the analysis period.
V. Milk / cow / year (kg)	The total milk produced per cow place in the year. The total milk divided by the average population of cows (both in milk and dry).
W. Average protein (%)	The weighted average protein% of all milk recorded during the analysis period.
X. Average fat (%)	The weighted average fat% of all milk recorded during the analysis period.
Y. 305 day yield (kg)	The average 305 day production for all cows reaching 305 days after calving during the analysis period.
Z(1). 305-day milk yield (kg), Lactation 1 cows	The average 305 day production for lactation 1 cows reaching 305 days after calving during the analysis period.
Z(2). 305-day milk yield (kg), Lactation 2 cows	The average 305 day production for lactation 2 cows reaching 305 days after calving during the analysis period.
Z(3). 305-day milk yield (kg), Lactation 2+ cows	The average 305 day production for lactation 2+ cows reaching 305 days after calving during the analysis period.
Z(4). 305-day milk yield (kg), Lactation 3+ cows	The average 305 day production for lactation 3+ cows reaching 305 days after calving during the analysis period.
ZA. 305 day protein yield (kg)	The average 305 day production of milk protein for all cows reaching 305 days after calving during the analysis period.
ZB. 305 day fat yield (kg)	The average 305 day production of milk fat for all cows reaching 305 days after calving during the analysis period.
ZC. % of lactation 1 cows achieving ≤75% of average 3rd calver milk yields	When comparing the 305-day milk yields for lactation 1 and 3 cows, the % of lactation 1 cows with a milk yield ≤75% of the average milk yield of lactation 3 cows.

ZD. % of lactation 1 cows achieving 75%-85% of average 3rd calver milk yields	When comparing the 305-day milk yields for lactation 1 and 3 cows, the % of lactation 1 cows with a milk yield 75% to 85% of the average milk yield of lactation 3 cows.
ZE. % of lactation 1 cows achieving ≥85% of average 3rd calver milk yields	When comparing the 305-day milk yields for lactation 1 and 3 cows, the % of lactation 1 cows with a milk yield ≥85% of the average milk yield of lactation 3 cows.
Somatic Cell Count (SCC)	
ZF. Average herd SCC ('000 cells/ml)	The weighted average somatic cell count of all milk recorded during the analysis period.
ZG. % of milk samples with SCC ≥200,000 cells/ml	The percentage of all recorded milk samples during the analysis period that had an individual SCC reading of 200,000 cells/ml or higher.
ZH. % of milk samples with SCC ≥500,000 cells/ml	The percentage of all recorded milk samples during the analysis period that had an individual SCC reading of 500,000 cells/ml or higher.
ZI. % of cows with 1st recording SCC ≥200,000 cells/ml	The percentage of all cows starting new lactations that had a high SCC (≥200,000 cells/ml) reading at the first milk recording in the lactation.
ZJ. % chronic SCC ≥200,000 cells/ml	The percentage of all milk samples taken in the analysis period that originated from chronic SCC cows where the current and previous milk samples both had SCC levels of 200,000 cells/ml milk or greater.
ZK. Dry period cure (High:Low) (%)	Of re-calving cows recorded starting a new lactation during the analysis period: the percentage of cows ending the previous lactation with a HIGH SCC (≥200,000 cells/ml) that started the new lactation with a LOW SCC (<200,000 cells/ml).
ZL. Dry period protection (Low:Low) (%)	Of re-calving cows recorded starting a new lactation during the analysis period: the percentage of cows ending the previous lactation with a LOW SCC (<200,000 cells/ml) that also started the new lactation with a LOW SCC (<200,000 cells/ml).
ZM. % of cows with a low SCC at end of previous lactation (SCC<200,000 cells/ml)	Of re-calving cows recorded starting a new lactation during the analysis period: The percentage that had a LOW SCC (<200,000 cells/ml) at the last milk recording in the previous lactation.
ZN. % New SCC ≥200,000 cells/ml	The percentage of all recorded milk samples that were of the "New" SCC Category, namely the first HIGH SCC (≥200,000) in a lactation following one or more low SCC samples.
ZO. % of cows dried-off with no SCC ≥200,000 cells/ml	The percentage of cows completing a lactation without recording a high SCC (cows recording only LOW SCC samples (<200,000 cells/ml) in the previous lactation).
ZP. Threshold Index new high / new low	Of cows with consecutive milk records in the same lactation, the number of cows changing from Low SCC at the previous to High SCC at the next recording divided by the number of cows going from High SCC at the previous to Low SCC at the next recording.
ZQ. Recovery % of new/first/repeat infections	Of HIGH SCC cows (≥200,000cells/ml) that at the previous recording were either low SCC or not yet in milk, the percentage that were LOW SCC (<200,000 cells/ml) at the following recording.

ZR. Recovery % of chronic infections	Of CHRONIC High SCC cows (High SCC cows that at the previous recording were also High SCC), the percentage of those milked that were LOW SCC (<200,000 cells/ml) at the following recording.
ZS. % of cows drying off with no mastitis cases	The percentage of cows completing a lactation without recording a mastitis case.
ZY. Mastitis rate (cases/100 cows in milk per year)	The total cow cases of mastitis recorded divided by the average population of cows in milk, represented as a % (cases/100 cows in milk).
ZU. Index mastitis case by Day 30	The percentage of cows calving during the12 month period that recorded a mastitis case by day 30 of the lactation.
ZV. Index mastitis rate after Day 30	The incidence rate of index mastitis cases in cows that have passed 30 days since calving.