

A study of key performance indicators (KPIs) for 40 Jersey herds for the year ending 31st August 2025

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1.0 Executive Summary

This is the 3rd study of key performance indicators (KPIs) based on a cross-section of 40 UK Jersey herds that milk record with National Milk Records (NMR). The study provides up to date KPI benchmark values, that farmers and advisers can use to compare against the performance of their own herds. This study was previously conducted in 2012 and 2021, the text below compares data from the previous studies to the data from 2025 (Table 1). These findings can also be considered alongside comparable studies undertaken since 2010 on 500 Holstein/Friesian herds ([Annual KPIs - PAN Livestock](#)).

Herd demographics and longevity: Since 2012, the median **exit rate** has remained stable 25%, but cows are continuing to leave the herd after shorter productive lives. The median **productive life** (first calving to exit) has decreased by 12% from 1,529 to 1,344 days. The median number of completed **lactations at exit** has decreased from 4.1 to 3.6 lactations.

Fertility: Since 2012, the median **age at first calving (AFC)** has remained around 2 years 2 months and 2 years 4 months. The median **conception rate** has improved from 40% to 45% and the median **% of cows conceived by 100 DPP** has steadily increased from 34% to 37%. The median **calving to 1st service interval** has decreased from 89 to 81 days but the median **calving interval** has increased from 404 days in 2012 and 2021, to 408 days in 2025.

Milk yield and composition: Milk yield and composition has steadily improved. The median **milk per cow per year** has increased from 5,537 kg to 6,022 kg and median **lifetime milk per cow per day** increased from 8 kg to 9 kg. The median average **milk fat** has increased from 5.30% to 5.52% and median average **milk protein** has increased from 3.85% to 4.04%. **Combined fat and protein yield per cow / year** has increased in-line with milk yield trends from 511 to 581 kg.

Somatic cell count (SCC): The median **average herd SCC** has decreased from 198,000 cells/ml (2012) to 181,000 cells/ml (2025), after a slight increase to 201,000 cells/ml in 2021. The median % of milk samples with an **SCC $\geq$ 200,000 cells/ml** has decreased from 22% to 19% and median % of milk samples with an **SCC $\geq$ 500,000 cells/ml** has decreased from 8% to 7%. The median **% of cows dried off with no SCC samples $\geq$ 200,000 cells/ml** was 44% and 45% in 2021 and 2025 (data was not available for 2012).

Summary: While exit rates have stayed steady, cows are now having shorter productive lifespans and leaving the herd younger with fewer completed lactations. Fertility performance is broadly stable with a slight improvement in conception rate and calving to 1st service intervals. Milk yield, fat% and protein% have continued to improve, with higher production per cow alongside increases in fat and protein content. Udder health has also improved overall, with lower SCC compared with 2012.

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 3rd annual study describing key performance indicators (KPIs) of production, fertility and health in commercial Jersey 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 40 commercial Jersey 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 40 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?”**

A KPI template of 38 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 mainly the monthly milk records obtained by NMR. Of 63 Jersey herds which milk record with NMR, 40 herds were included in the study. To be included, herds must have contained at least 30 cows in the study year, regularly milk record with NMR (i.e. no gaps of more than 3-months) with no incomplete KPI data and contain a minimum of 70% Jersey cows.

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 section 8 (pages 10 to 12).

As shown in Figure i, 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.

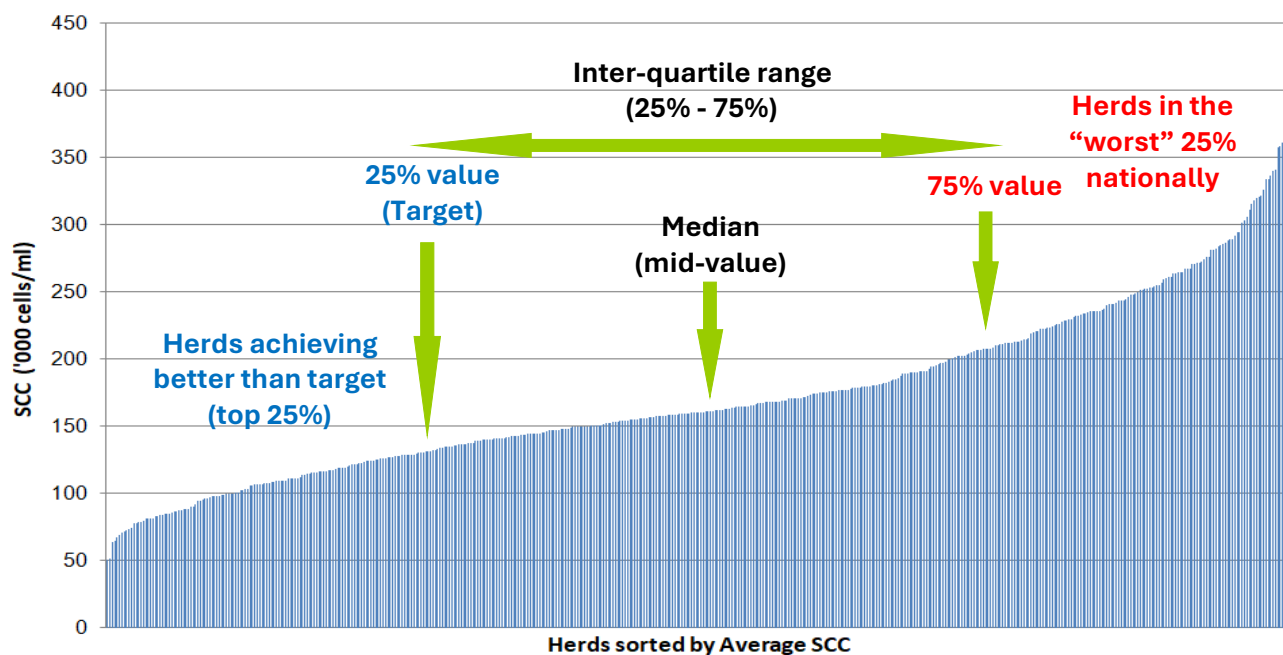


Figure i. A description of the median, inter-quartile range and target values generated for each parameter using average SCC ('000 cells/ml) as an example whereby the target value is the first quartile since a low SCC is more preferable.

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 40 NMR milk recording herds for the year ending 31 August 2025.

Parameter	Median	Inter-quartile range	Target
Herd size (number of cows) *	155	100 - 194	
Herd Demographics			
A. Culling rate	25%	21% - 32%	21%
B. Culling in first 100 days of lactation	4%	3% - 7%	3%
C(a). Age at exit (years)	5.9	5.2 - 6.8	6.8
C(b). Age at exit (lactations)	3.6	2.9 - 4.3	4.3
D. Productive life (days)	1,344	1,049 – 1,658	1,658
Fertility			
E. Percentage Served by day 80	53%	43% - 65%	65%
F. Percentage conceived 100 days after calving	37%	25% - 48%	48%
G. Calving to 1 st service interval (days)	81	73 - 98	73
H. Calving interval (days)	408	385 - 427	385
I(a). Age at 1 st calving (years)	2.2	2.1 - 2.4	2.1
I(b). Age at 1 st calving (months)	26.5	24.8 - 28.3	24.8
J. Conception rate	45%	40% - 49%	49%
K. Percentage service intervals at 18-24 days (Heat detection)	42%	32% - 51%	51%
L. Percentage service intervals >50 days	20%	13% - 29%	13%
M. Percentage eligible for service that served (Submission rate)	36%	27% - 47%	47%
N. Percentage eligible for service that conceived (Pregnancy rate)	16%	11% - 21%	21%
Milk Production			
O. Lifetime milk / cow / day (kg)	9.0	7.2 - 11.6	11.6
P. Milk / cow / year (kg)	6,022	5,485 - 7,335	7,335
Q. Average Protein%	4.04%	3.91% - 4.14%	4.14%
R. Average Fat%	5.52%	5.30% - 5.69	5.69%
S. 305-day yield (kg)	6,000	5,369 - 7,218	7,218
T. 305-day Protein (kg)	231	211 - 283	283
U. 305-day Fat (kg)	330	282 - 393	393
TU. Combined protein + fat yield / cow / year (kg)	581	496 - 698	698

Parameter	Median	Inter-quartile range	Target
Somatic cell count (SCC)			
V. Average SCC ('000 cells/ml)	181	142 - 233	142
W. Percentage SCC $\geq$ 200,000 cells/ml	19%	15% - 22%	15%
X. Percentage SCC $>$ 500,000 cells/ml	7%	6% - 10%	6%
Y. Percentage 1st recording SCC $\geq$ 200,000 cells/ml	19%	15% - 25%	15%
Z. Percentage chronic SCC $\geq$ 200,000 cells/ml	9%	7% - 13%	7%
ZA. Percentage Dry period cure (High:Low)	73%	64% - 81%	81%
ZB. Percentage Dry period protection (Low:Low)	84%	79% - 89%	89%
ZC. Percentage Low at end of previous lactation (SCC $<$ 200,000 cells/ml)	77%	70% - 83%	83%
ZD. Percentage New SCC $>$ 200,000 cells/ml	6%	5% - 8%	5%
ZE. Percentage Dried-off with no SCC $>$ 200,000 cells/ml	45%	35% - 51%	51%
ZF. Threshold Index new high / new low	1.12	1.03 - 1.28	1.03
ZG. Recovery percentage of new/first/repeat infections	57%	52% - 60%	60%
ZH. Recovery percentage of chronic infections	21%	18% - 29%	29%

5.0 KPI results for 2012, 2021 and 2025

Table 2. A comparison of median KPI values derived from Jersey herds in 2012, 2021 and 2025.

Parameter	Year of the study	2012	2021	2025
Total number of herds		74	53	40
Herd size (number of cows)*		125	135	155
Herd Demographics				
A. Culling rate		25%	25%	25%
B. Culling / death rate in first 100 days of lactation		6%	5%	4%
C(a). Age at exit (years)		6.6	6.4	5.9
C(b). Age at exit (lactations)		4.1	4.0	3.6
D. Productive life (days)		1,529	1,569	1,344
Fertility				
E. Percentage Served by day 80		51%	56%	53%
F. Percentage conceived 100 days after calving		34%	35%	37%
G. Calving to 1 st service interval (days)		89	85	81
H. Calving interval (days)		404	404	408
I(a). Age at 1 st calving (years)		2.3	2.2	2.2
I(b). Age at 1 st calving (months)		27.8	25.9	26.5
J. Conception rate		40%	42%	45%
K. Percentage service intervals at 18-24 days		35%	41%	42%
L. Percentage service intervals >50 days		28%	23%	20%
M. Percentage eligible for service that served		32%	37%	36%
N. Percentage eligible for service that conceived		14%	16%	16%
Milk Production				
O. Lifetime milk / cow / day (kg)		8.0	8.9	9.0
P. Milk / cow / year (kg)		5,537	5,480	6,022
Q. Average Protein%		3.85%	3.97%	4.04%
R. Average Fat%		5.30%	5.41%	5.52%
S. 305-day yield (kg)		(a)	5,933	6,000
T. 305-day Protein (kg)		(a)	235	231
U. 305-day Fat (kg)		(a)	314	330
TU. Combined protein + fat yield / cow / year (kg)		511	524	581
Somatic Cell Count				
V. Average SCC ('000 cells/ml)		198	201	181
W. Percentage SCC >=200,000 cells/ml		22%	21%	19%
X. Percentage SCC >500,000 cells/ml		8%	8%	7%
Y. Percentage 1st recording SCC >=200,000 cells/ml		23%	21%	19%
Z. Percentage chronic SCC >=200,000 cells/ml		11%	11%	9%

Parameter	Year of the study	2012	2021	2025
ZA. Percentage Dry period cure (High:Low)		67%	70%	73%
ZB. Percentage Dry period protection (Low:Low)		84%	84%	84%
ZC. Percentage Low at end of previous lactation * (SCC<200,000 cells/ml)		70%	72%	77%
ZD. Percentage New SCC >200,000 cells/ml		(b)	8%	6%
ZE. Percentage Dried-off with no SCC >200,000 cells/ml		(b)	44%	45%
ZF. Threshold Index new high / new low		(b)	1.22	1.12
ZG. Recovery percentage of new/first/repeat infections		(b)	52%	57%
ZH. Recovery percentage of chronic infections		(b)	18%	21%

(a) = For 305 day milk parameter no figures are compared here because until 2015 the 305 day yield figure was calculated from all lactation, including lactations that were shorter than 305 days. However, since 2016 the 305 day yield calculation is based only on lactations that are at least 305 days long.

(b) = These SCC parameters were not available in KPI data file in 2012

6.0 The practical use of KPIs in InterHerd+

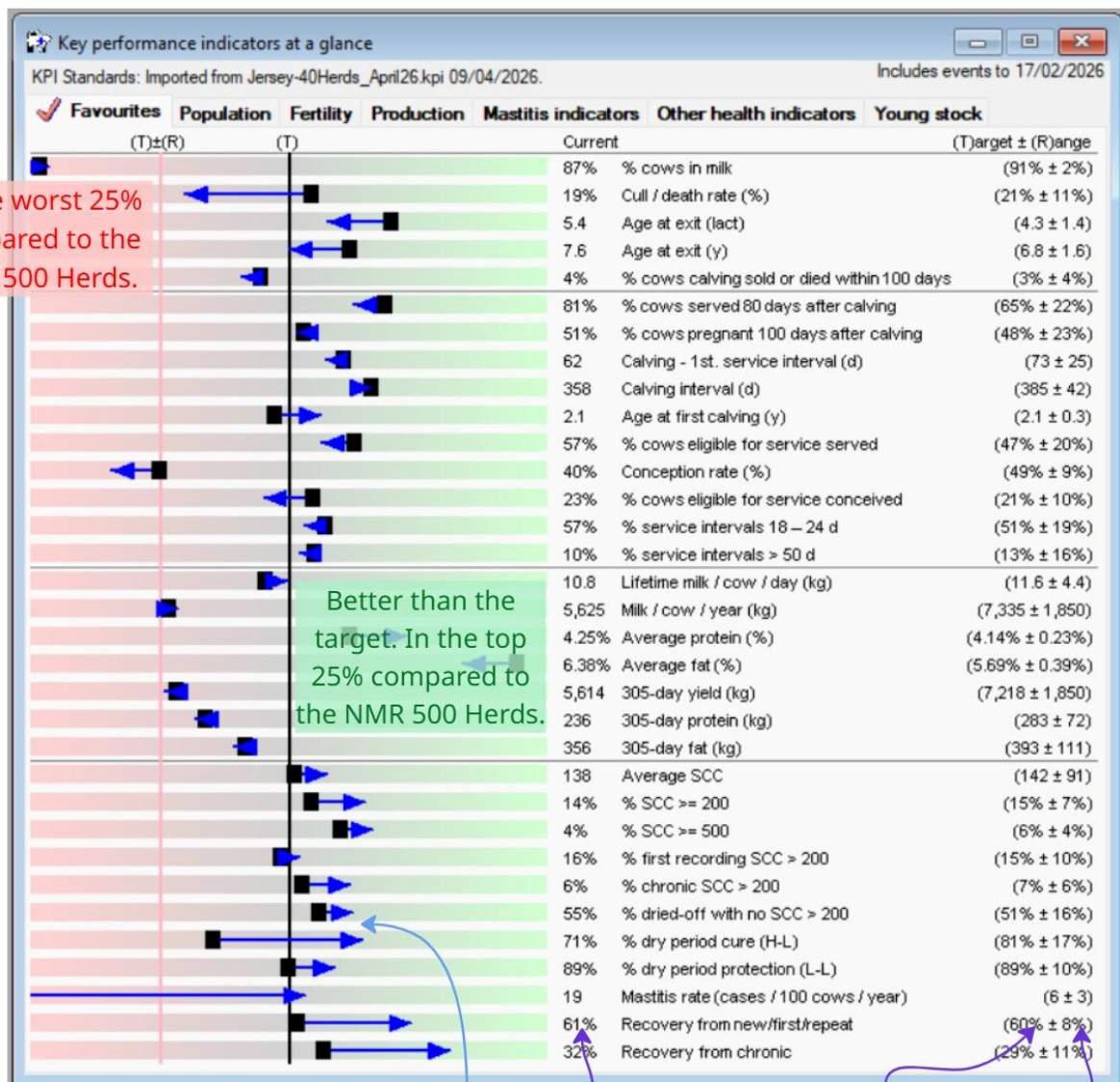
The 40-herd KPI report is designed as a management tool for farmers, vets and advisers, to benchmark herd progress and set targets alongside those in the report. The combination of parameters relating to production, fertility and health, emphasizes the dynamic nature of dairy production. Many herds are 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 40 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 40 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 40 herds.
- Values between the black and red lines are worse than the target but better than the worst 25% of the 40 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.



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	
A. Culling 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. Percentage culled / died 100 days after calving	The percentage of heifers/cows calving during the 12 month period that exit within 100 days after calving.
C(a). Age at exit (years)	The average age (in days) of cows culled/died in the analysis period, divided by 365.24
C(b). Age at exit (lactations)	The average number of lactations completed by cows culled/died in the analysis period.
D. Productive life (days)	The difference between age at first calving and age at exit (in days).
Fertility	
E. Percentage Served by day 80	The percentage of cows reaching the 80 th day after calving that have been served at least once.
F. Percentage conceived 100 days after calving	The percentage of cows reaching 100 days after calving that have conceived.
G. Calving to 1 st service interval (days)	The average days between calving and 1 st service for all cows served for the first time in a lactation during the analysis period.
H. Calving interval (days)	The interval between calvings, in days, for all re-calvings recorded in the analysis period.
I. Age at 1 st calving (years)	The age at first calving for all cows calving for the first time during the analysis period.
J. 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.
K. Percentage 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. Percentage 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. Percentage 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. Percentage 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.

Milk Production	
O. 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.
P. 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).
Q. Average protein%	The weighted average protein% of all milk recorded during the analysis period.
R. Average fat%	The weighted average fat% of all milk recorded during the analysis period.
S. 305 day yield (kg)	The average 305 day production for all cows reaching 305 days after calving during the analysis period.
T. 305 day protein (kg)	The average 305 day production of milk protein for all cows reaching 305 days after calving during the analysis period.
U. 305 day fat (kg)	The average 305 day production of milk fat for all cows reaching 305 days after calving during the analysis period.
TU. Combined protein + fat yield / cow / year (kg)	The combined protein + fat yield per cow per year (kg).
Somatic cell count	
V. Average SCC ('000 cells/ml)	The weighted average somatic cell count of all milk recorded during the analysis period.
W. Percentage SCC $\geq 200,000$ 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.
X. Percentage SCC $\geq 500,000$ 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.
Y. Percentage 1st recording SCC $\geq 200,000$ cells/ml	The percentage of all cows starting new lactations that had a high SCC ($\geq 200,000$ cells/ml) reading at the first milk recording in the lactation.
Z. Percentage chronic SCC $\geq 200,000$ 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.
ZA. Percentage 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 ($\geq 200,000$ cells/ml) that started the new lactation with a LOW SCC ($< 200,000$ cells/ml).
ZB. Percentage 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).

ZC. Percentage Low 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.
ZD. Percentage New SCC $\geq 200,000$ cells/ml	The percentage of all recorded milk samples that were of the “New” SCC Category, namely the first HIGH SCC ($\geq 200,000$) in a lactation following one or more low SCC samples.
ZE. Percentage Dried-off with no SCC $\geq 200,000$ 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).
ZF. 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.
ZG. Recovery percentage of new/first/repeat infections	Of HIGH SCC cows ($\geq 200,000$ cells/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.
ZH. Recovery percentage 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.