



Providing Evidence-Based Livestock Solutions

# DAIRY ANTIMICROBIAL FOCUS

Annual Report 2024

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- HERD YEAR ON YEAR COMPARISONS
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# WELCOME

Welcome to the fourth edition of the Kingshay Antimicrobial Focus Report which provides an annual summary of the antimicrobial purchasing trends from dairy herds across the UK.

The data reported is drawn from 879 dairy herds and was collected as part of Kingshay's **Antimicrobial Monitoring Service**. The service, which was developed in 2018, continues to provide vets, producers, and milk processors with accurate, clear, and concise reporting of farm medicine usage.

This edition reports on the 2024 trends (to the period ending March 2024) and also looks back over the last 5 years of data. It demonstrates the continued and sustained reduction in antimicrobial usage seen within the UK dairy sector. For this year's report we have also included health data from Kingshay's Dairy Manager service. The health data demonstrates that the reduction in antimicrobial usage has been achieved alongside the maintenance of, or improvements in key health parameters and without a compromise in animal welfare.

As we look to the future, data such as this, is key to the UK dairy industry being able to demonstrate its health and welfare credentials and the ability to report on antimicrobial usage is an essential part of this. Many of the herds included in this report already contribute their data to the Medicine Hub which is a key tool for helping the UK in meeting the requirements for national antibiotic reporting which, will in turn build our reputation with customers at home and abroad, maintaining current export markets, as well as developing new ones.

*Report co-authors Emma Puddy,  
Tim Potter and Kathryn Rowland.*



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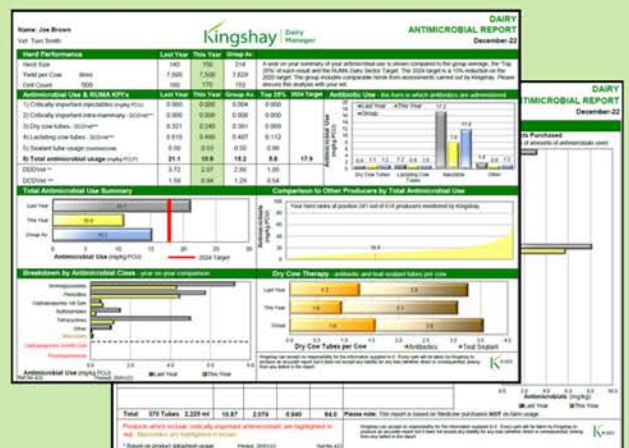
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## ANTIMICROBIAL DATA COLLECTION METHODOLOGY

Livestock numbers were collected from each producer and the antimicrobial purchases were collected from the vet practice. A set of validated reports were then created and sent out to the producer/vet to check all products were included and validate the accuracy of the report content. Any products that were not used during the period were adjusted, as well as any products used on other livestock enterprises, such as beef or sheep.

## REPORTING THE RESULTS

All producers and vets received a summary report for their individual herd(s) benchmarked against other producers for the same period and also the previous year. Example reports are shown in the Appendix.



To find out more about our **Antimicrobial Monitoring Service** and other services that Kingshay offer, visit [www.kingshay.com](http://www.kingshay.com)

# SUMMARY

This is the seventh year that Kingshay has been monitoring antimicrobial usage. For the period ending March 2024, there were 879 dairy herds in this dataset.

Figure 1 shows the continued reduction in total antimicrobial usage (AMU) since 2020, well below the 2024 target of 17.9mg/PCU. This target was calculated based on a 15% reduction of the 2020 RUMA target of 21mg/PCU. The year ending March 2024 saw another marked reduction in AMU from the previous year, down to 12.7mg/PCU, a reduction of 19% since 2020.

The aim of responsible usage is not zero antimicrobial usage in farmed animals, as these medicines are crucial for maintaining health and welfare when faced with bacterial

infections. The aim has always been to reduce their usage as much as possible whilst still maintaining their availability and effectiveness to treat disease. Our data does not suggest that herd health or milk production are suffering, in fact, as total antimicrobial use has been reduced, mastitis rates and bulk somatic cell counts have also seen reductions, and alongside this there has not been a rise in culling for mastitis or an increase in the rate of cows leaving the herd (see pages 6 & 7).

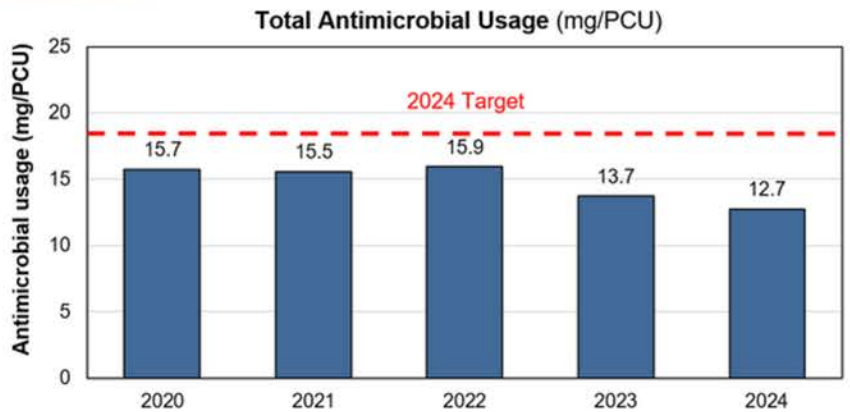


Figure 1 - Antimicrobial use trends over 5 years

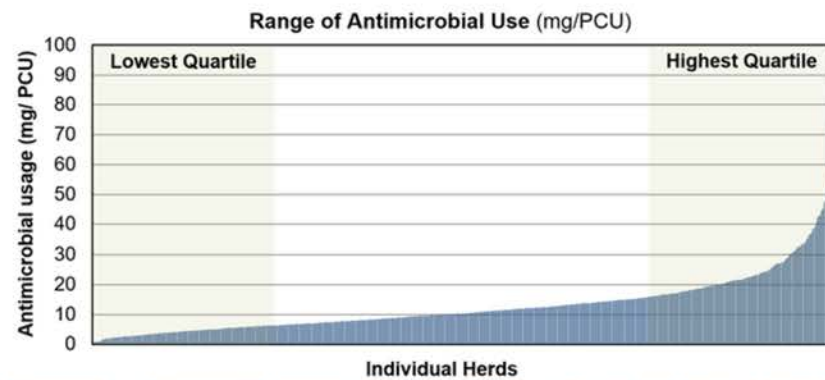


Figure 2 - Range of antimicrobial use by individual dairy herds

Figure 2 shows the distribution of the total antimicrobial use of all the herds that were included in this analysis. As with previous years, the data demonstrates the large variation in usage across the herds that were monitored. Whilst many herds have successfully reduced their usage far below the targets there remains a group of farms which still have a very high level of usage. The impact of these higher users is significant when considering the overall usage of the group as the highest quartile of herds currently contribute 50% of the group usage.

An individual farm's usage can vary dramatically year-on-year, often in response to disease outbreaks etc. The key to continual reductions in the industry is that these increases in usage are addressed at the time with remedial steps taken to address specific disease challenges. There also remains a need for vets and advisors to engage further with higher users so that they can be supported in reducing their reliance on antimicrobials.

## KEY REPORT TRENDS (for the period ending March 2024)

Average total antimicrobial usage (AMU) has reduced by 7% to:

12.7 mg/PCU

879 dairy herds ...included in this report...

121 vet practices

96.1% of herds did not use any HP-CIAs

50% of herds were in a different AMU quartile than the previous year.

By region, the North has achieved the biggest reduction in AMU:

↓ 21%

The highest quartile of herds are contributing

50%

of overall AMU.

## TRENDS OVER 5 YEARS

### OVERALL TRENDS

After a period of relative plateau during 2020 to 2022, total antimicrobial usage has declined both in 2023 and 2024, to 12.7mg/PCU for the year ending March 2024. This represents a 19% reduction over 5 years from 2020 to 2024.

Antibiotic dry cow tube usage has continued its decline, with a steeper drop in the latest year of 5.8% to 0.425 DCDVet. The steady decrease in antibiotic tube usage has not been accompanied by a consistent increase in teat sealant tube usage. Up until 2023 there had been 3 years of increases of teat sealant usage, however 2024 saw a slight decrease per cow from 2023.

Lactating cow tubes have shown a stronger decrease, with a decrease of 10.2% in the last year, and a decrease of 30.8% since 2020. The consistent, year-on-year reduction in lactating cow tube usage is in line with the target laid out by the RUMA Target Task Force 2 of an annual reduction in a 3 year rolling average.

Antimicrobial Use (March year end)	2020	2021	2022	2023	2024
HP-Critically important injectables (mg/PCU)	0.039	0.017	0.014	0.013	0.007
HP-Critically important intra-mammary (DCDVet)	0.009	0.008	0.003	0.002	0.003
Dry cow tubes (DCDVet)	0.484	0.471	0.454	0.451	0.425
Lactating cow tubes (DCDVet)	0.558	0.491	0.471	0.430	0.386
Sealant tube usage (courses/cow)	0.36	0.39	0.41	0.47	0.41
<b>Total antimicrobial usage (mg/PCU)</b>	<b>15.7</b>	<b>15.5</b>	<b>15.9</b>	<b>13.7</b>	<b>12.7</b>

**Table 1** - Total antimicrobial usage over 5 years (including 5 key areas)

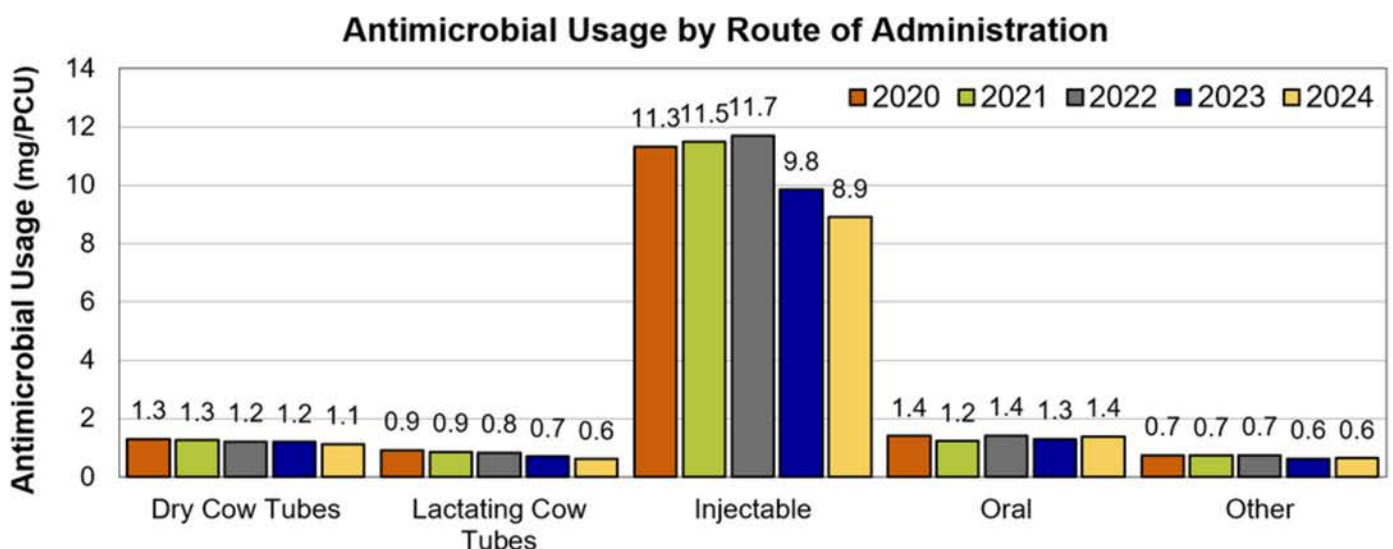
Use of injectable products containing the highest priority critically important antimicrobials (HP-CIAs) has decreased by 82% since 2020, to 0.007mg/PCU, an enormous achievement, with these products now making up only 0.06% of total antimicrobial use in dairy herds.

### ROUTE OF ADMINISTRATION

When considering antimicrobial usage by route of administration we see differing trends. Dry cow tubes and lactating cow tubes have been steadily dropping incrementally over the last five years, and injectable products have shown the largest drop in terms of mg/PCU, with a change of -2.4mg/PCU since 2020.

The data does not show any significant change in the volume usage of oral products over the last 5 years with usage levels in 2024 being similar to that recorded for 2020, which is concerning as oral administration of antimicrobial drugs is one of the highest risks for antimicrobial resistance.

The 'other' category includes intrauterine and topical applications



**Figure 3** - Trends in antimicrobial administration over the last 5 years

# TRENDS OVER 5 YEARS

## ANTIMICROBIAL CLASS

The penicillins remain the most frequently used antimicrobial class by mg/PCU. Tetracyclines now represent the second largest volume, overtaking aminoglycosides for the first time in the last five years.

The aminoglycosides showed the biggest decrease, with a drop of 23% from the previous year which may be down to changes in veterinary prescribing practices but also issues with availability of certain products.

Use of 3rd and 4th generation cephalosporins and fluoroquinolones remains extremely low in terms of mg/PCU, at 0.0064mg/PCU for 3rd and 4th generation cephalosporins, and 0.0022mg/PCU for fluoroquinolones. This represents a 74% drop in 3rd and 4th generation cephalosporin use since 2020, and a 90% drop in fluoroquinolone use since 2020.

Macrolides have been presented separately as although they are not classified as HP-CIAs, there are a number of milk contracts that have taken the decision to prohibit their use, a step which is likely to be behind the reduction seen in the usage of this class of antimicrobials.

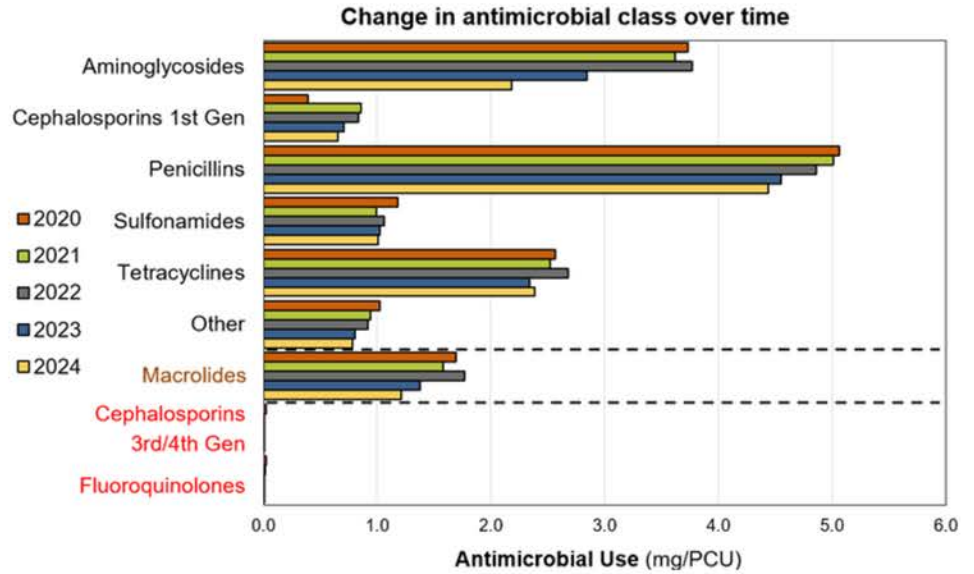


Figure 4 - Antimicrobial use over 5 years by antimicrobial class

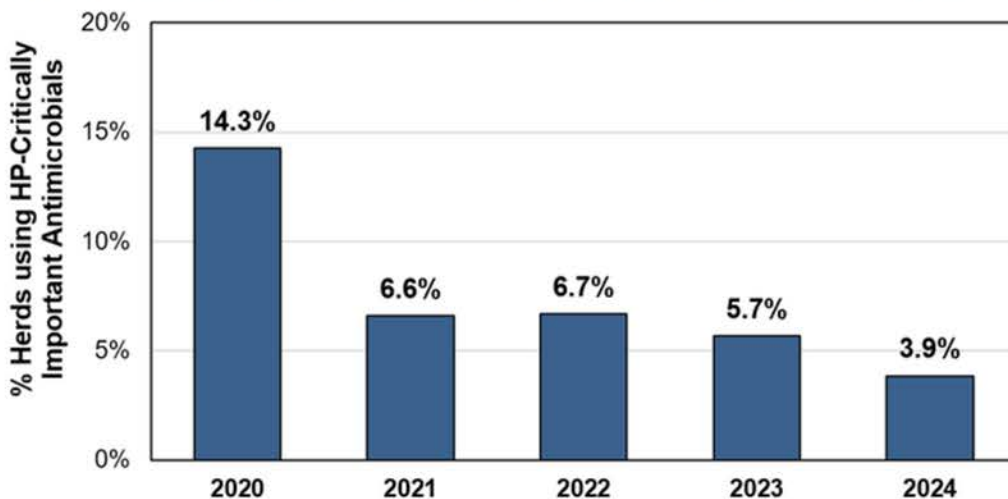
## EUROPEAN MEDICINES AGENCY (EMA) CLASSIFICATION

- PRUDENCE**  
(Category D)
- CAUTION**  
(Category C)
- RESTRICT**  
(Category B)
- AVOID**  
(Category A)

When examining the proportions of antimicrobials used as categorised by the European Medicines Agency (EMA), dairy herds are continuing to make steady progress away from those antimicrobials that are most crucial for human health:

- The proportion of antimicrobials used that fall into Prudence (Category D) has increased from 50.97% in 2020 to 55.84% in 2024 in terms of mg/PCU.
- Those in Caution (Category C) have decreased from 48.80% in 2020 to 44.10% in 2024.
- Most importantly, the antimicrobials used that are in Restrict (Category B - HP-CIAs) have decreased from 0.23% to 0.06% of total antimicrobials used in dairy herds in terms of mg/PCU.
- Zero herds have been recorded as using antimicrobials in Avoid (Category A), as these are banned for use in food-producing animals.

## HIGHEST PRIORITY CRITICALLY IMPORTANT ANTIMICROBIALS (HP-CIAs)



The percentage of herds using HP-CIAs at all has dropped by nearly three-quarters since 2020, down to just 3.9% of herds.

Figure 5 - Percentage of herds using highest priority critically important antimicrobials over 5 years

## HERD HEALTH

The mantra of “as little as possible, as much as necessary” has been at the heart of the approach to the responsible use of antimicrobials in the dairy sector, and acknowledges achieving zero use of antibiotics is neither possible nor appropriate.

Antimicrobials are a key tool in the treatment of bacterial disease; therefore, we have seen two areas of focus to achieve reductions in antimicrobial usage:

1. Optimising animal health and the prevention of disease to reduce the need for antimicrobials in the first place. For example, management of endemic diseases such as BVD and promotion of the importance of colostrum management in the prevention of disease in calves.
2. Ensuring that when antimicrobials are used it is done so in a responsible manner, with the appropriate product used in the appropriate way.

To achieve a long-term, sustainable reduction in antimicrobial usage, it has been essential that activities to reduce usage have not compromised animal health or welfare. In this section we look at the health trends in the UK dairy sector over the last 6 years to demonstrate that the reduction in antimicrobial usage has been achieved alongside the maintenance of, or improvements in key health parameters, without compromising animal welfare.

Table 2 summarises health data from herds using Kingshay’s **Dairy Manager Service** over the last six years looking specifically at lameness, mastitis, cow mortality and reasons for cows leaving the herd.

Health Parameters	2019	2020	2021	2022	2023	2024
Lameness cases (per 100 cows)	40	42	36	36	33	37
Mastitis cases (per 100 cows)	39	36	32	30	29	26
Cell counts ('000)	161	164	163	161	159	159
Cows leaving herd rate (% of herd)	28.6	28.5	28.6	28.5	29.1	28.4
Forced leaving reasons (% of leavers)	68	70	68	70	65	66
Mortality rate (% of herd)	1.90	1.90	1.75	1.70	1.63	1.72
Age at exit (lactations)	3.63	3.59	3.49	3.50	3.56	3.46

**Table 2** - Health data from herds using Kingshay’s Dairy Manager service

### Lameness

The lameness rate for 2024 was 37 cases per 100 cows, which is lower than the rate for 2019 at 40 cases per 100 cows. It is however, higher than the figure recorded for 2023. Whilst there is a general downward trend in the number of cases of lameness, there has not been a consistent reduction year-on-year over the last 6 years. Lameness can result from a number of different clinical conditions both non-infectious and infectious and in the absence of further data on the exact cause, it is not possible to examine further the reasons behind this variation.

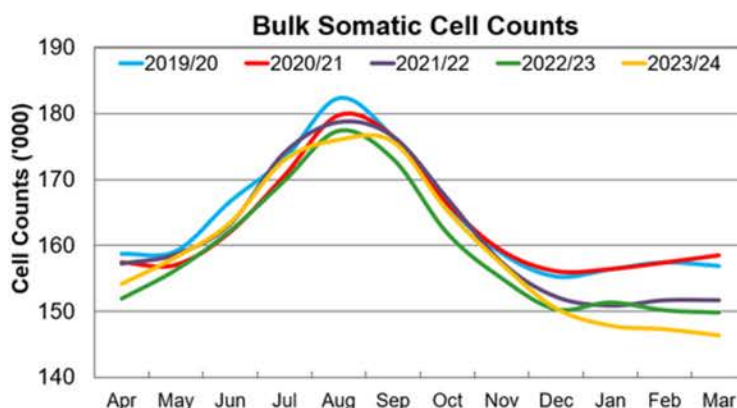
### Mastitis

The RUMA Targets Task Force 2 report (TTF2) set out the aim for a fall in mastitis compared to 2019 rates. The data in Table 2 demonstrates that this has been achieved within the monitored herds, with rates consistently falling over the last 6 years from 39 cases per 100 cows in 2019 to 26 cases per 100 cows in 2024. The fall in clinical cases has been accompanied by the year-on-year reduction in the usage of lactating cow tubes, with usage dropping from a DCDvet of 0.558 in 2020 to 0.336 in 2024. The treatment of mastitis is one of the key reasons for usage of antimicrobials in the dairy sector, but the fall in the number of cases and the associated fall in tube usage demonstrates the dairy sector’s commitment to address the challenge of this disease.

### Bulk Somatic Cell Counts

Somatic cell counts of non-organic herds have reduced over the last 5 years with reductions being seen year-on-year. There remains a seasonal pattern with a rise in bulk somatic cell counts being observed during the summer months although the peak was lower in 2023-2024.

Historically there had been widespread use of blanket antimicrobial dry cow therapy for the control of subclinical mastitis. In a move to more targeted use there has been a significant focus on the adoption of selective dry cow therapy. The adoption of more targeted dry cow therapy has seen the usage of dry cow tubes fall from a DCDvet of 0.484 in 2020 to 0.425 in 2024 (see page 8). Figure 6 demonstrates that over the same time frame, a reduction in bulk somatic cell counts has been seen, suggesting the more targeted approach to antimicrobial dry cow tube usage has not had any negative impact on the ability of herds to manage these infections.



**Figure 6** - Monthly somatic cell counts over 5 years

# COW MORTALITY & CULLING

Antimicrobials are a key tool in the treatment of bacterial disease, and it is important to ensure that the drive for more responsible use of antimicrobials has not resulted in a situation where herds are unable to effectively treat the diseases they were presented with. Looking at the mortality data for the last 5 years gives us an insight into disease management on farms.

The RUMA TTF2 also set out the aim that mortality should fall from the baseline in 2020, as an indicator of improved health on farm with no negative impact of the changes in antimicrobial usage. The mortality rate on the monitored herds in 2024 was 1.72% which is lower than the mortality rate in 2019 of 1.90%.

The overall rate of 'cows leaving the herd' across the monitored herds has remained relatively static and was 28.4% in 2024.

Figure 7 looks in more detail at how cows left the herd. Across the years the vast majority of animals that leave farms are sold for slaughter. From 2020 to 2024 there has been both a reduction in the percentage of animals leaving as casualty cows and also in the percentage of animals that have died on farm.

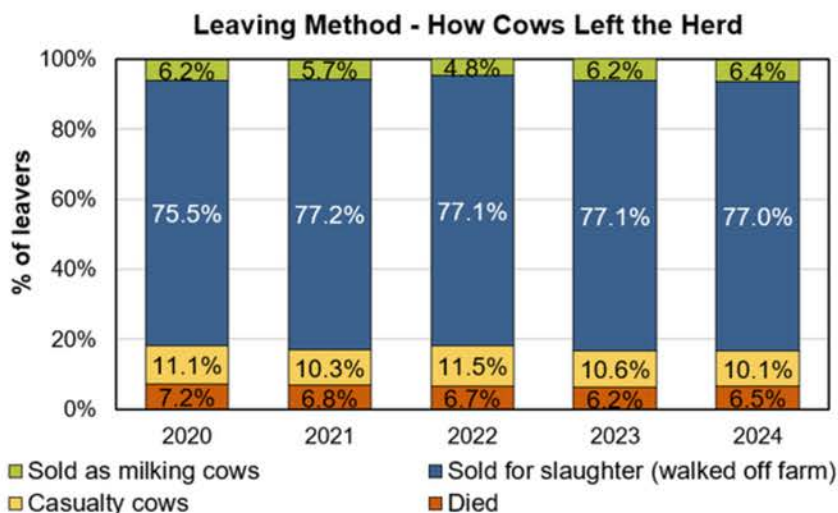


Figure 7 - Method of cows leaving herd over 5 years

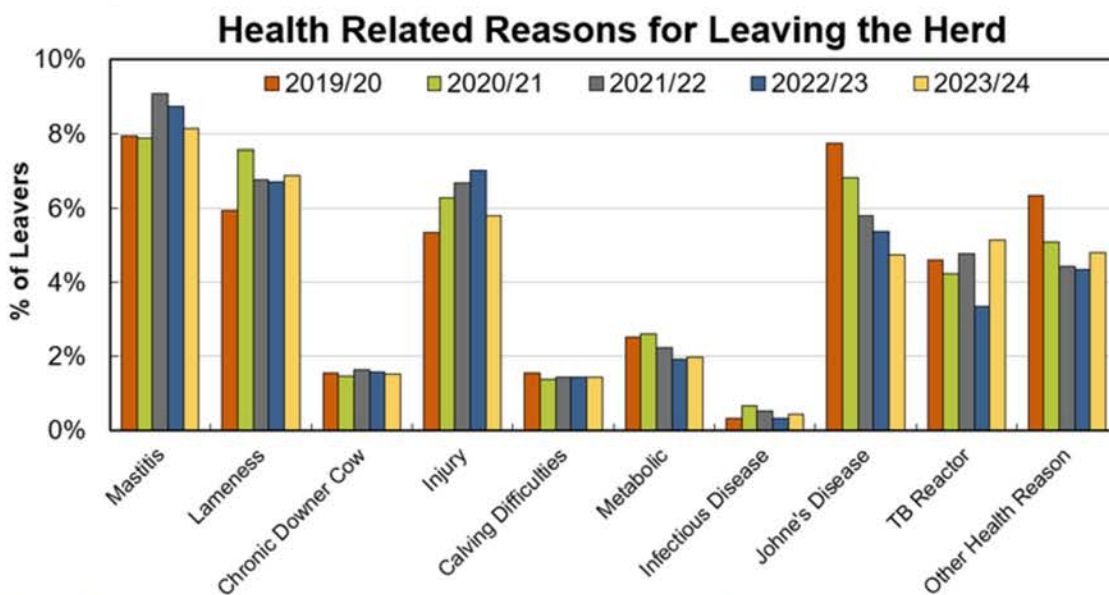


Figure 8 shows the health related reasons for cows leaving the herd over the last 5 years. The number of cows leaving due to mastitis related reasons has remained relatively static over this period, although there has been a slight increase in the number of cows leaving due to lameness.

Figure 8 - Health related leaving reasons over the last 5 years

Figure 9 shows the proportion of forced reasons to selective reasons. Over the last 5 years as the general health of the monitored herds has been improving there has been a reduction in the percentage of forced reasons and a corresponding rise in selective reasons.

This shift enables dairy producers to plan out their culling strategy more and enables a more proactive approach to improving the overall health, welfare and productivity of their herds, allowing culling for management / performance related reasons.

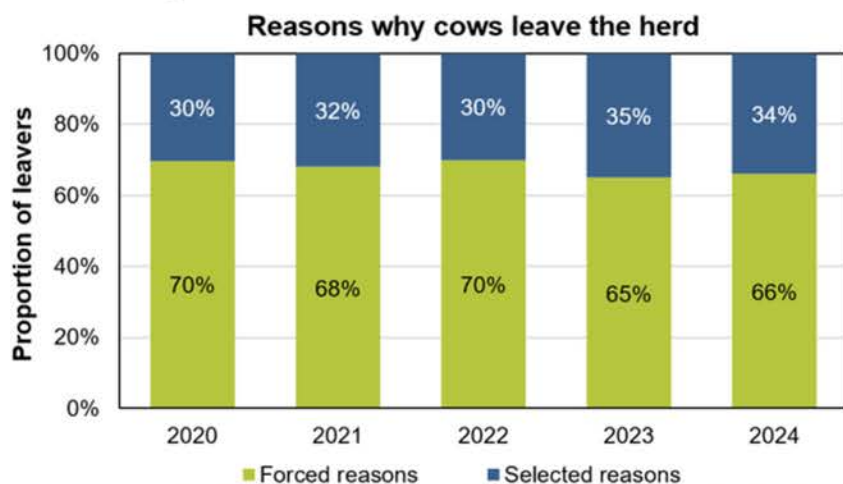


Figure 9 - Proportion of forced versus selected leaving reasons

# DRY COW THERAPY

The continued adoption of selective dry cow therapy and usage of teat sealants still plays a key role in the strategy to reduce “unnecessary” antimicrobial use and the data presented in the health section of this report - specifically the mastitis case rate and bulk somatic cell counts - demonstrates that this has not had any negative impact on the control of mastitis in the national herd.

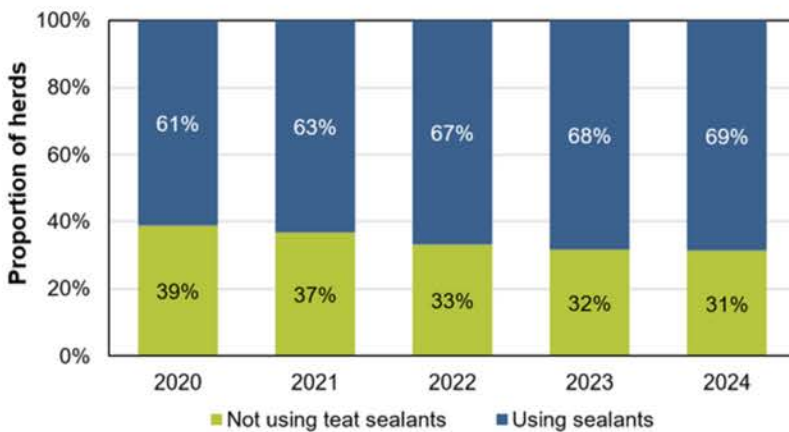
The number of antibiotic tubes used in dry cow therapy has dropped further in 2024 to an average of 1.53 tubes per cow, with the DCDVet down to 0.425 (see Table 1 on page 4). The continued drop in the use of antibiotic dry cow tubes is in line with the RUMA Targets Task Force 2 aim of an annual reduction in a 3 year rolling average of sales of dry cow tubes.

**11.6% of herds didn't use any antibiotics as part of their dry cow therapy.**

Dry Cow Therapy (tubes per cow)	2020	2021	2022	2023	2024
Antibiotics	1.77	1.75	1.67	1.65	1.53
Teat sealants	1.44	1.54	1.64	1.88	1.65

**Table 3 - Dry cow therapy (antibiotics vs teat sealants)**

**Proportion of herds using teat sealants over time**



Teat sealant usage had been increasing year on year from an average of 1.44 tubes per cow in 2020 to 1.88 tubes per cow in 2023, but this year it has dropped back down to 1.65 tubes per cow. It is unclear as to the reasons why this year has seen a drop on an otherwise increasing trend year-on-year.

Thirty one percent of the herds included in this data set are still not using any form of teat sealants as part of their dry cow therapy demonstrating the large opportunity for greater adoption across the sector.

**31% of herds didn't use any teat sealants as part of their dry cow therapy.**

**Figure 10 - Proportion of herds using teat sealants over time**



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## PRODUCTS OVERVIEW

The data presented in this report is based on antimicrobial sales data only and not farm records of usage. As such we do not have access to information on what diseases/conditions the products are being utilised for. Table 4 shows the top 10 products by total mg of antimicrobials.

Of the top 10 products, 8 of them are injectable with a lot of similarity across the herds on what products are being utilised. It is worth noting the significant impact the use of oral antimicrobial products can have on overall usage. Two of the products within the top 10 are oral products, despite being used on only a relatively small number of herds; Chloromed was used on 47 herds and Parafor was used on 42 herds. Oral administration of antimicrobials (especially to groups of animals) carries with it a higher risk of developing antimicrobial resistance when compared to other routes of administration (e.g. by injection or via tube) and so it is important that farms consider alternative disease control strategies, wherever possible. Adopting practices that avoid the need for the use of these oral products will help farms significantly reduce their overall antimicrobial usage.

order	Product Name	Product Application Method	Antimicrobial Class	No of Herds using Product	Total Usage (mg)
1	Pen & Strep	Injectable	Aminoglycoside, Penicillin	578	153,934,447
2	Betamox	Injectable	Penicillin	637	129,879,675
3	Diatrim	Injectable	Sulphonamide, Anisole	496	104,972,640
4	Synulox RTU	Injectable	Penicillin	585	89,716,214
5	Chloromed	Oral	Tetracycline	47	69,000,750
6	Tylan 200	Injectable	Macrolide	293	42,776,200
7	Engemycin 10%	Injectable	Tetracycline	428	37,425,240
8	Pharmasin Inj	Injectable	Macrolide	214	37,204,000
9	Alamycin LA 200	Injectable	Tetracycline	299	36,927,600
10	Parafor powder	Oral	Aminoglycoside	42	33,285,000

**Table 4** - Top 10 products used ordered by total active ingredient volume (mg)

Comparing the list of products for 2024 to that for 2023 there is a lot of similarity between the two years. Pen & Strep remains the product contributing the most to the total antimicrobial usage and the same products feature in the top 5 of both years. There has been some reordering of the products, and this is likely to have been down to some of the ongoing challenges in product availability that have been seen over the last 12 months. It is interesting to note that in 2024 there are no longer any dry cow tubes within this top ten, with Ubrostar Red not featuring in the list this year. Parafor features on the list for the first time in 2024. Five of the products on the list (Pen & Strep, Synulox RTU, Tylan 200, Pharmasin and Parafor) fall into category C (Caution) of the EMA categorisation with the rest falling into category D (Prudence).

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# HERD QUARTILE ANALYSIS

As was seen last year, the average of all quartiles was lower than those of the previous year, giving a picture of general lowered usage across the dataset. The greatest reduction in AMU was seen in the upper quartile, a reduction of 1.4mg/PCU.

Antimicrobial Usage by Quartile	Lowest 25%	2nd 25%	3rd 25%	Highest 25%
HP-Critically important injectables (mg/PCU)	0.005	0.004	0.011	0.008
HP-Critically important intra-mammary (DCDVet)	0.000	0.006	0.002	0.003
Dry cow tubes (DCDVet)	0.266	0.421	0.479	0.500
Lactating cow tubes (DCDVet)	0.261	0.347	0.427	0.497
Sealant tube usage (courses/cow)	0.350	0.41	0.40	0.48
<b>Total antimicrobial usage (mg/PCU)</b>	<b>4.2</b>	<b>8.3</b>	<b>12.9</b>	<b>25.3</b>
Change on last year (mg/PCU)	-0.6	-0.8	-1.2	-1.4

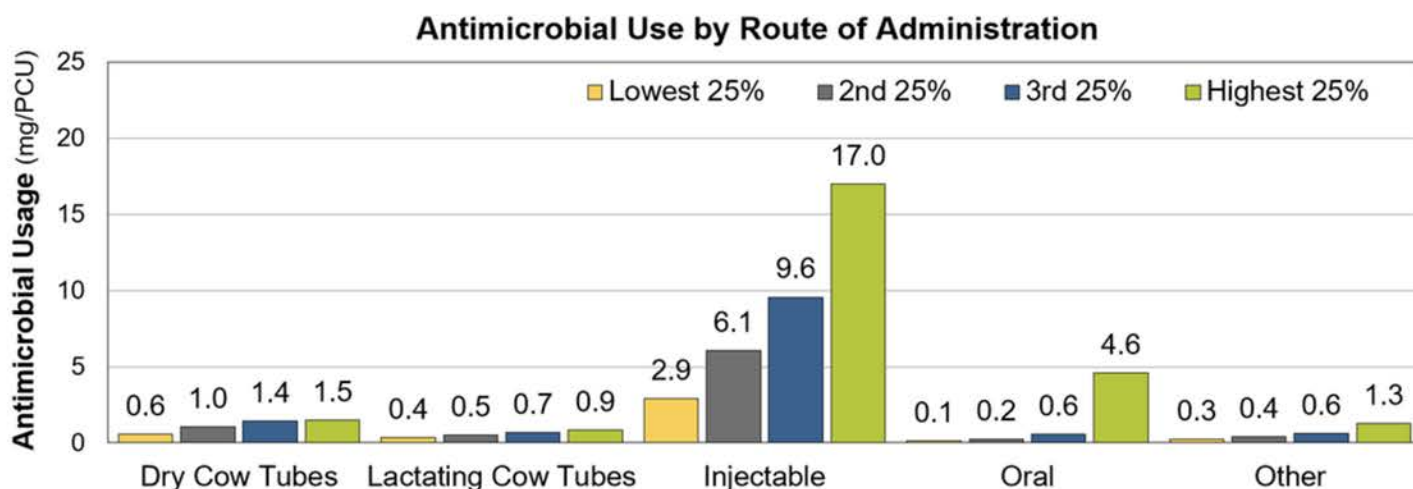
**Table 5** - Quartile analysis of antimicrobial usage (year ending March 2024)

When split into quartiles of total antimicrobial usage (mg/PCU), further analysis within those quartiles shows that other subsections of antimicrobial usage do not always follow total AMU. The 3.9% of herds using HP-CIAs are not all herds in the highest quartile of total antimicrobial usage, in fact the second lowest quartile had the highest use of HP-CIA intramammary products, albeit still very low rates of use at 0.006 DCDVet. The third quartile had the highest rate of use of HP-CIA injectable products, not the top quartile.

## QUARTILE ANALYSIS BY ROUTE OF ADMINISTRATION

When antimicrobial use is split by route of administration, the magnitude of use follows total AMU trends, with increasing use in each ascending quartile, and injectable products contributing the largest share within each quartile.

Orally-administered antimicrobial products are overrepresented in the highest quartile of users, contributing 18% of their usage in terms of mg/PCU, compared to 11% of the total dataset's usage. Oral products are mostly used in calves against pathogens causing respiratory disease and infectious scours. These products contribute heavily to mg/PCU figures, as they are mostly used to medicate whole groups of animals in response to a disease outbreak.



**Figure 11** - Antimicrobial route of administration by quartile (year ending March 2024).

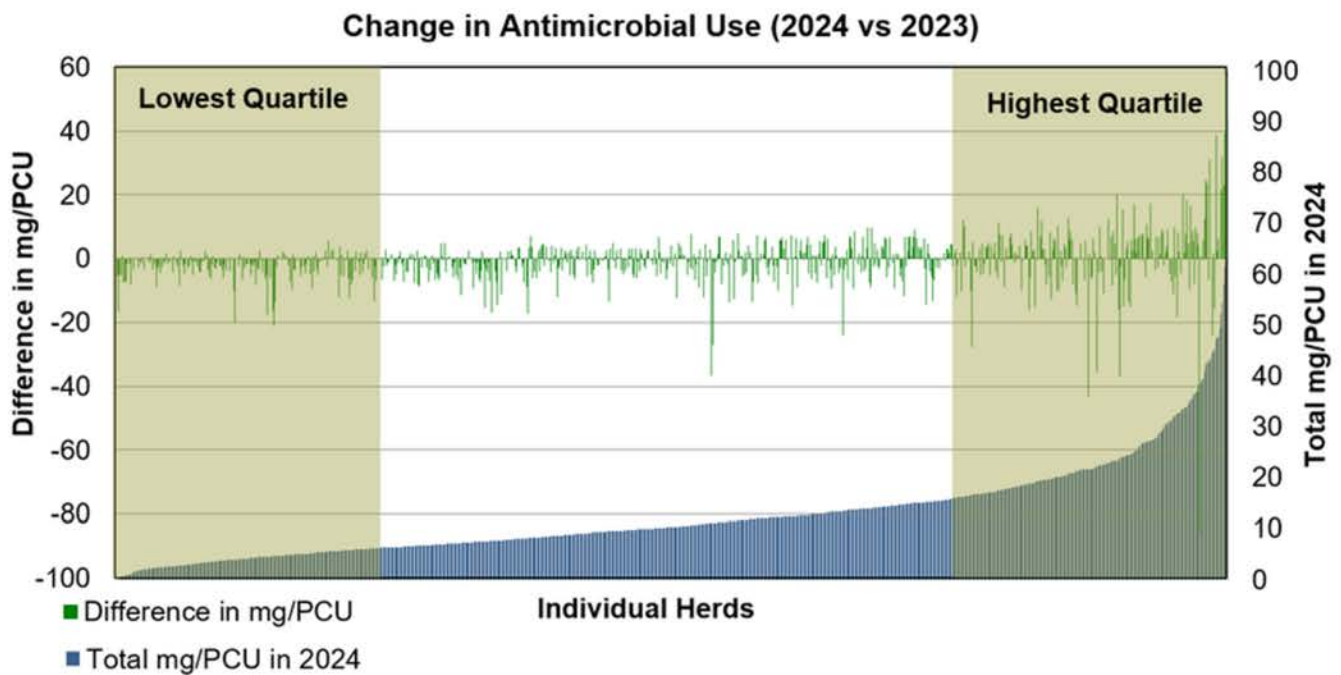


## HERD CHANGES YEAR ON YEAR

Average total antimicrobial usage trends over time give an essential picture of the industry, however individual farm changes are much more dynamic.

Figure 12 below displays each farm as a blue bar, ranked in order of total antimicrobial usage (mg/PCU). Each farm that contributed data for the previous year also has a green bar to show the change in usage from last year, using the same order of magnitude.

During this time, 50% of herds had moved to be in a completely different quartile for their total antimicrobial usage compared to the previous year. This is a phenomenon also seen in last year's analysis, where 49% were in a different quartile to the preceding year. This shows that on an individual farm level, disease challenges are very different from year to year, and a farm with a high total AMU in any given year will not necessarily have a high total AMU the following year.



*Figure 12 - Change in antimicrobial use (2024 vs 2023)*

Table 6 shows analysis of farms with data for both the year ending 2024 and the year ending 2023. As in Figure 12, Table 6 shows the high variability in antimicrobial usage on individual farms from one year to the next: in all quartiles, there are herds whose total AMU has increased or decreased significantly.

The most extreme changes can be seen in the minimum and maximum change figures for each quartile. The highest using herd from 2023's report has reduced their total AMU by 86.3mg/PCU from the previous year, a reduction of 69%, from 124.9 mg/PCU to 38.6 mg/PCU.

Changes Year on Year by Quartile	Lowest 25%	2nd 25%	3rd 25%	Highest 25%
% of herds showing a decrease	63%	56%	43%	36%
% of herds showing an increase	21%	33%	48%	55%
Average change on last year (mg/PCU)	-2.73	-1.70	-0.66	1.41
Range of change on last year (mg/PCU)				
Min change	-21.0	-17.2	-36.6	-86.3
Max change	5.5	7.2	9.9	57.5

50% of herds were in a different quartile for total AMU than they were the previous year.

*Table 6 - Changes year on year in antimicrobial use by quartile (2024 vs 2023)*

## REGIONAL TRENDS

Comparing antimicrobial usage by region highlights some very interesting differences with the South / South East regions lowering their usage by 18% to 9.9 mg/PCU from 11.7 last year.

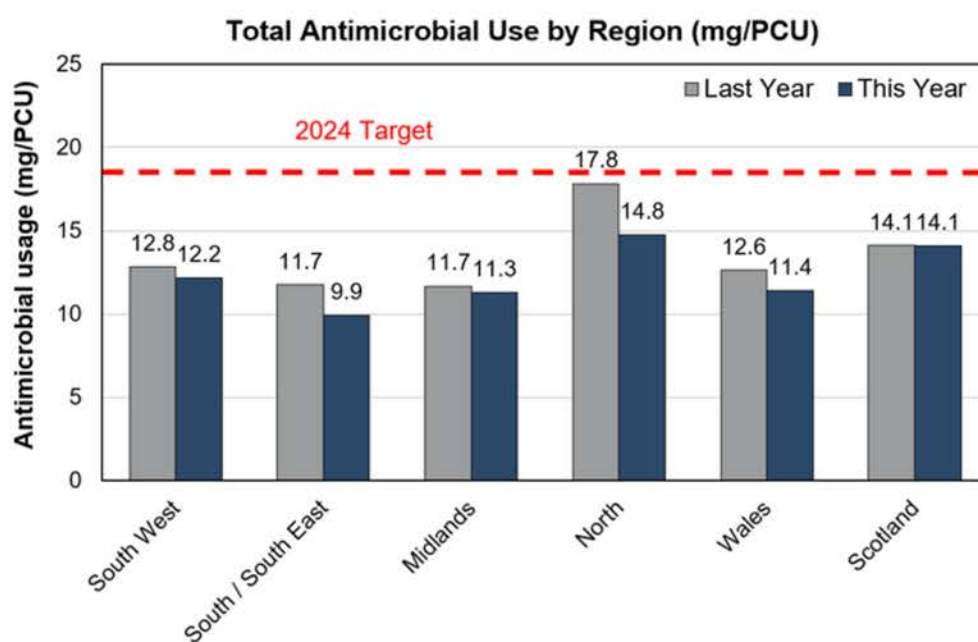
Table 7 illustrates a higher usage in the North and Scotland regions compared to the Southern regions. In our analysis, herds in the North still averaged the highest at 14.8 mg/PCU but this figure has come down considerably by 21% compared to 17.8 mg/PCU last year and has seen the biggest change in all the regions. As dry cow and lactating cow tubes are similar to last year, this would suggest the biggest changes are in injectables and oral usage. Scotland however, remained nearly identical to last year at 14.1 mg/PCU. When analysing herds in the highest quartile in more depth, 48% of those herds were located in the North & Scotland.

Antimicrobial Use by Region (March 2024 year end)	South West	South / South East	Midlands	North	Wales	Scotland
% of herds	30%	5%	7%	18%	19%	20%
Herd size	204	170	122	180	195	175
Yield per cow (litres)	7,240	6,773	6,477	7,278	6,756	7,074
Somatic cell count ('000)	161	186	185	162	165	166
HP-Critically important injectables (mg/PCU)	0	0	0.019	0.004	0.004	0.021
HP-Critically important intra-mammary (DCDVet)	0	0	0.014	0	0.005	0.005
Dry cow tubes (DCDVet)	0.385	0.344	0.485	0.533	0.363	0.444
Lactating cow tubes (DCDVet)	0.413	0.502	0.513	0.330	0.316	0.377
Sealant tube usage (courses/cow)	0.52	0.54	0.35	0.27	0.43	0.35
<b>Total antimicrobial usage (mg/PCU)</b>	<b>12.2</b>	<b>9.9</b>	<b>11.3</b>	<b>14.8</b>	<b>11.4</b>	<b>14.1</b>
<b>Usage reduction on previous year</b>	<b>-5%</b>	<b>-18%</b>	<b>-3%</b>	<b>-21%</b>	<b>-11%</b>	<b>0%</b>

**Table 7 - Antimicrobial use by region**

There were regional variations in the usage of HP-CIAs. The South West, South and South East all had zero usage of both injectables and intra-mammary HP-CIAs.

There were also marked differences in the teat sealant usage across the regions. The South West, South and South East regions appeared to have higher teat sealant usage compared to the Northern regions. A most noticeable trend is the reduction in courses/cow in the Midlands area, where it has dropped to nearly half what it was last year, from 0.97 to 0.35 courses/cow, but the year before it was 0.32 courses/cow. This may be partly due to bulk purchasing of certain teat sealant products.

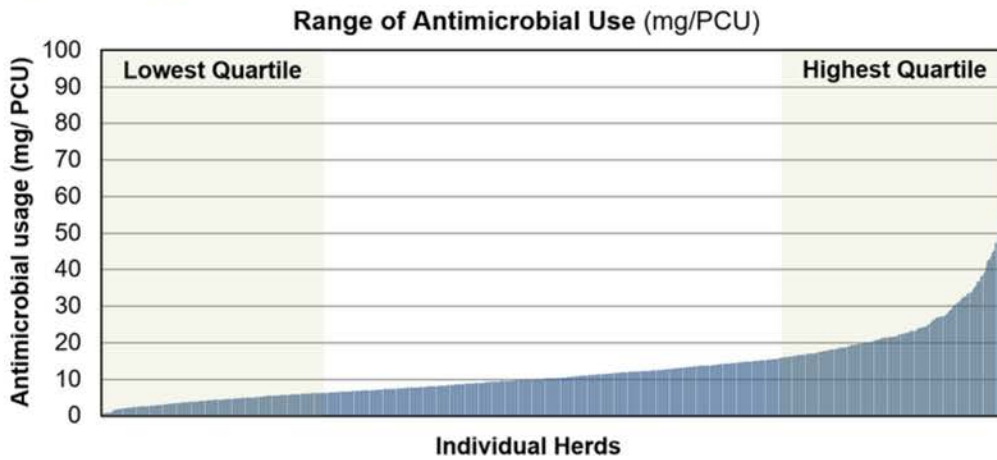


**Figure 13 - Total antimicrobial use by region (last year vs this year)**

A more detailed analysis would be needed to understand why there are a range of differences in antimicrobial usage between regions, as average milk yields suggest similarities between all regions.

## HERD LEVEL COMPARISONS

There is still a wide range of antimicrobial use seen in the individual herd analysis for the period ending March 2024, a similar range to 2023, with 80% of herds demonstrating total usage lower than the 17.9 mg/PCU target for 2024.

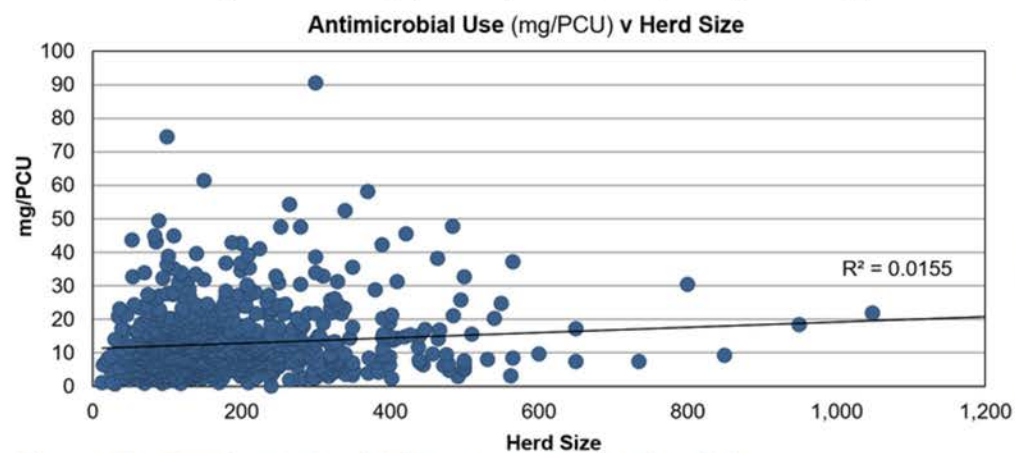


**Figure 14** - Range of total antimicrobial use by individual herd

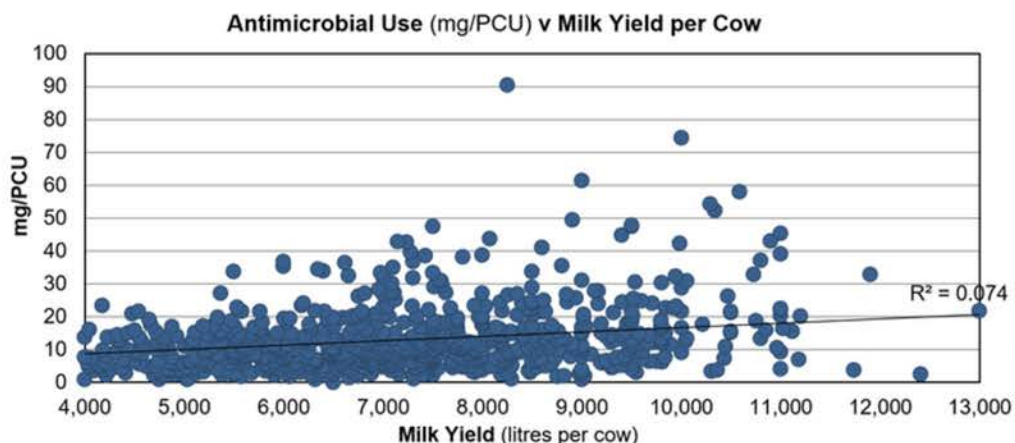
There are still improvements to be made, particularly in the highest 25%, which are contributing 50% of the overall antimicrobial usage. Industry monitoring and benchmarking, such as this, helps highlight the farms where further work is required, and then individual herd analyses can be used by vets and farmers to formulate targeted plans for improvement.

### HERD SIZE & MILK YIELD CORRELATIONS

Analysis of antimicrobial usage by herd size and milk yield show a similar spread to 2023, although there is no statistical correlation seen between antimicrobial usage and either of those parameters as demonstrated in Figures 15 & 16. There are herds across the range of different production systems that are proving low antimicrobial usage can be achieved through good herd health. There was also no correlation seen between antimicrobial usage and calving pattern, milking frequency, housing period or breed.



**Figure 15** - Total antimicrobial use compared to herd size



**Figure 16** - Total antimicrobial use compared to milk yield per cow

Ranking herds from the lowest to highest usage shows a range of 0.02 to 90.45 mg/PCU, a similar range to 2023 data.

Of the 879 herds analysed, 707 herds (80%) demonstrated total usage lower than the 17.9 mg/PCU target for 2024.

The median for the group is 10.31 mg/PCU, highlighting that these higher users are pulling up the mean average to 12.7 mg/PCU.





# GLOSSARY

Term	Definition
<b>Antibiotic</b>	A medicine used to prevent and treat bacterial infections specifically. This report is primarily focused on the use of antibiotics, as a subset of wider antimicrobials.
<b>Antimicrobial</b>	A product which kills or slows the spread of a range of microorganisms, including bacteria, viruses, protozoans, and fungi. Antibiotics are antimicrobials.
<b>Highest Priority - Critically Important Antimicrobials (HP-CIAs)</b>	Identified by European Medicines Agency as being of most importance in human medicine (category B). HP-CIAs consist of 3rd and 4th generation cephalosporins, fluoroquinolones and polymyxins.
<b>DCDVet (Defined Course Dose)</b>	The assumed average dose per kg animal per species per treatment.
<b>DDDVet (Defined Daily Dose)</b>	The assumed average dose per kg animal per species per day.
<b>EMA</b>	European Medicines Agency
<b>mg/PCU (Population Corrected Unit)</b>	Milligrams per kilogram PCU, the unit of measurement developed by the European Medicines Agency to monitor antibiotic use and sales across Europe, which has also been adopted by the UK in its national reports.  Uses average weight at time of treatment (calculated as average weight over whole lifetime). Calculation assumes all beef animals are for slaughter.
<b>RUMA (Responsible Use of Medicines in Agriculture Alliance)</b>	Is a unique, independent non-profit group involving organisations that represent all stages of the food chain from 'farm to fork'. RUMA aims to produce a co-ordinated and integrated approach to best practice in animal medicine use. It has an established communications network with government departments and many non-governmental organisations.

## ANTIMICROBIAL PROJECT TEAM



**EMMA PUDDY**  
*Farm Services Specialist*

Emma has joined the Dairy Manager team to assist with our antimicrobial reporting services and other data analysis projects.



**KATHRYN ROWLAND**  
*Senior Farm Services Manager*

Kathryn manages the Dairy Manager team, playing a key part in analysing key performance data and writing technical articles for publication.



**TIM POTTER**  
*Senior Clinical Director*

Tim is part of the Kingshay leadership team. Since completing his PhD examining antimicrobial resistance in calf pneumonia, he regularly delivers training both nationally and internationally on the responsible use of medicines and calf health.



**MARY-KATE FOSTER**  
*Farm Services Specialist*

Mary-Kate is responsible for the smooth running of the antimicrobial service for key corporate clients. She deals with any technical queries and customer support related tasks.



**CHRISTINA FORD**  
*(currently on maternity leave)*

Christina's main role is developing, testing and promoting Kingshay's core services, as well as helping with the antimicrobial project.



**MOLLY LEE**  
*Administration Assistant*

Molly has helped process a lot of the antimicrobial data that we received from the vets, in a wide variety of different formats.



Providing Evidence-Based Livestock Solutions

# DAIRY ANTIMICROBIAL FOCUS REPORT 2024

**PUT OUR INDEPENDENT INFORMATION, SERVICES AND ADVICE TO WORK ON YOUR FARM TO BUILD A HEALTHIER, MORE PROFITABLE FUTURE.**

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Our Dairy Insight users have a wealth of dairy industry knowledge at their fingertips, via the Kingshay App, the internet and regular mailings. We also offer membership options for veterinary practices, farm advisers, colleges, universities and corporate bodies.

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### Data Services

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For any further information on the above services, call our team on **01458 851555**.



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