



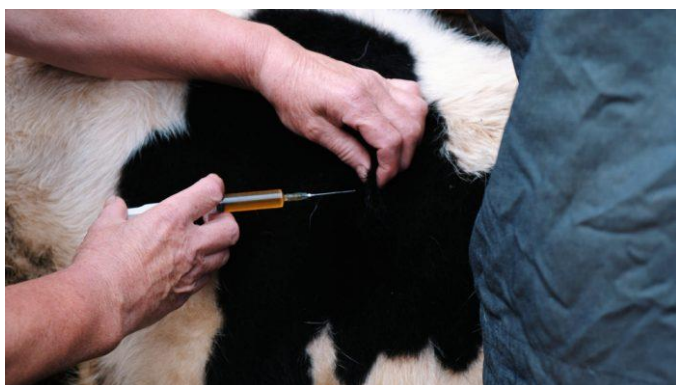
Farm Vet News

Endell Farm Vets Blog

Endell Vets Dairy Team

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Antimicrobial Usage Update



Antimicrobial usage (AMU) within food producing animals has been under public scrutiny in recent years, with pressure to reduce general usage as well as the use of Highest Priority Critically Important Antibiotics (HP-CIAs) coming from milk buyers and assurance companies. This article aims to highlight the good that has already been done and also areas to look at in order to further reduce usage on farm.

WHY IS AMU IMPORTANT?

In 2015 the government commissioned the O'Neill report which called for a reduction in the use of unnecessary AMU within the livestock industry. From then on targets have been set within assurance schemes and milk contracts to reduce AMU, such as the use of selective dry cow therapy, as well as reducing the use of HP-CIAs.

The main concern regarding AMU in livestock is for the potential increase in the number of resistant pathogens. Misuse of antimicrobials, across veterinary and human medicine, has facilitated the development of resistance in some pathogens. There are fears that resistant pathogens in livestock, and animals in general, could pose a risk to human health, although the importance of this risk is unknown.

As an industry we are obligated to achieve a reduction in our AMU because the potential consequences to human and animal health are significant. However, it is important to note that using antibiotics is not 'bad'. Antibiotics are important medicines needed for treating diseases caused by a bacterial agent.

Nevertheless, as an industry antimicrobials have been used in the past in cases which are deemed;

1. Inappropriate (e.g. to prevent a bacterial infection that may or may not cause disease).
2. Ineffective (e.g. used to treat a disease caused by a virus).
3. Preventable (e.g. to treat diseases that are preventable via vaccination, improving hygiene etc.).

It is this usage of antimicrobials that we are trying to reduce.

Good News!

Sales of antibiotics within the UK livestock industry have fallen by 53% since 2014¹

Sales of HP-CIAs in cattle have fallen by 46% from 2015⁴

Total usage of antibiotics in the UK dairy industry have fallen by 35% since 2015⁴

HIGHEST PRIORITY-CRITICALLY IMPORTANT ANTIBIOTICS

HP-CIAs are antimicrobials which are deemed by the World Health Organisation (WHO) as critically important for human health. The aim is to preserve these classes of antimicrobials in order to reduce the likelihood of resistance developing. According to Red Tractor these classes are;

- Fluoroquinolones e.g. Baytril, Marbox, Marbocyl.
- Third and fourth generation cephalosporins e.g. Ceftiofyl, Naxcel, Excenel, Cephaguard.

However the WHO have additional classes of antibiotics that they categorise as HP-CIAs. Most are not relevant to livestock, however there are many products commonly used in livestock containing macrolides, e.g. Tylan, Pharmasin, Draxxin, Zactran, which are one of these classes. Although Red Tractor doesn't require diagnostic or sensitivity testing in order to use macrolide-containing antimicrobials, we should also be considering when it is appropriate to use these products and try to switch to products lower down on the WHO's priority list.

As with everything, there is always room for improvement...

There are four key general concepts in order to reduce AMU as well as the use of HP-CIAs;

- **Reduce the need** - by improving the general health of your animals and biosecurity/hygiene on your farm you can reduce the need for antimicrobials in the first place.
- **Replace HP-CIAs** - using drugs deemed as 'less important' by the WHO, especially as first line treatments, by discussing treatment options for common diseases with your vet in order to come up with a suitable protocol.
- **Record keeping** - good record keeping of which animals were treated, with what drug and the response to treatment allows assessment of treatment protocols to determine their effectiveness on your farm.
- **Refine** - refine your farm practices and treatment protocols by having regular (quarterly, six monthly or annual) herd health reviews in order to make changes and assess the outcome of these changes.

Below are some specific areas to consider when trying to reduce AMU on your Dairy Farm;

Udder Health

Treating mastitis can be responsible for up to 68% of antimicrobial usage on farm³. Reducing clinical mastitis rates on farm involves many factors, however it will have an overall benefit on your cows, your business and will reduce your AMU.

Reducing antimicrobial usage for clinical mastitis may also be achieved by reviewing your treatment protocols. For example the use of injectable antibiotics alongside intra-mammary tubes have been proven to have no beneficial effects in mild cases of clinical mastitis⁵.

Having a selective dry cow therapy protocol rather than treating all cows with antibiotics at drying off is another way to reduce AMU as well as saving you money due to the reduction in medicines cost.

Lameness

Although antimicrobials can be indicated in treating causes of lameness, the most common causes of lameness in cattle do not require injectable antimicrobial therapy.

Prompt detection and treatment of the cause of lameness plays a vital role in reducing AMU, as this should prevent lesions progressing to the point where antimicrobials would be required.

The use of antibiotics in foot-bathing is

considered unnecessary and should not be used. Other agents such as diluted formalin or copper sulphate should be considered instead.

Reproduction

Treatment of bacterial infections, such as metritis, often require antimicrobials. Historically these have involved the use of HP-CIAs with a nil milk withhold, but in light of the WHO recommendations and the change in Red Tractor Standards an alternative should be sought as a first line treatment.

Not all reproductive diseases require antimicrobials, for example retained foetal membranes without an associated raised temperature shouldn't need antimicrobial therapy. Treatment usually focuses around maintaining hydration and using an NSAID.

In general, postpartum reproductive disease can be prevented by managing the transition period appropriately as well as maintaining good hygiene.

Youngstock

Although youngstock will contribute little to your AMU figures, used to assess total usage on farm, it is an area where antimicrobials are frequently used. Bovine respiratory disease (BRD – pneumonia) and diarrhoea are both common diseases treated with antimicrobials.

These diseases are caused by a mix of viral, bacterial and protozoal agents and so antimicrobials are not always indicated. Assessing the causal agents of these diseases on your farm, along with ensuring treatment protocols are appropriate, can help to reduce antimicrobial use as well as improving treatment outcomes.

With both diseases environmental changes, good biosecurity and hygiene measures as well as vaccination can all reduce the incidence or prevent disease, reducing the need to treat and so reducing the amount of medicines used.

Infectious disease

Infectious diseases such as IBR (BHV-1), BVD, Johne's disease and bTB are often associated with an increase in AMU. This is due to an increased susceptibility to infection and so animals are more likely to get other diseases. bTB can also be linked to over stocking or restocking which increases your risk of infectious disease on farm.

Reducing the risk of infectious diseases, and so reduced associated AMU, can be achieved by knowing your current disease status and implementing appropriate biosecurity measures as well as vaccinations to help and control endemic disease on your farm.

SUMMARY

There are many ways in which AMU can be reduced on farm, however the main principles are simple and can not only reduce AMU but also improve the overall health status of your herd. It's important to note that we are already well on the way to achieving vast reductions in AMU and as a whole the dairy industry has put good steps in place in order to achieve this. We can always strive to do better and hopefully this article has given you some pointers on how to do so. As always, our vet team are always at the end of the phone for any more information or advice.

Written by Lillith Walton BVetMed MRCVS, on behalf of Endell Vets Dairy Team

References: 1 www.gov.uk/government/publications/veterinary-antimicrobial-resistance-and-sales-surveillance-2018 2 www.ema.europa.eu/en/documents/report/sales-veterinary-antimicrobial-agents-31-european-countries-2017 3 Kuipers and others 2016, Journal of dairy science 99 4 <https://www.ruma.org.uk/wp-content/uploads/2019/10/SO-309-RUMA-TTF-2-years-on-Full-Report-LR.pdf> 5 reducing AMU in practice article