

# Responsible Use of Antimicrobials Good Practice Guidelines July 2017



## Introduction

It is important that all veterinary surgeons, with sheep under their care, comply with the current veterinary medicines regulations<sup>(1)</sup> regarding the prescribing of antibiotics and we would advise they also ensure they are prescribing in accordance with BVA guidance on responsible use of antibiotics<sup>(2)</sup>.

Vets that have sheep under their care should expect to engage with sheep-specific CPD and actively engage with their sheep farmer clients on an annual basis. All sheep farms should have a health plan written in conjunction with their veterinary surgeon and reviewed at least annually. A review of preventative health strategies and all antimicrobial use should be included in the health plan.

We know that the critically important antibiotics (fluoroquinolones, systemic 3<sup>rd</sup> and 4<sup>th</sup> generation cephalosporins and colistin, as designated by the European Medicines Agency<sup>(3)</sup> and the VMD<sup>(4)</sup>) are already used at very low levels within the UK sheep industry<sup>(5)</sup>. We would suggest that going forward they should only be used in sheep under exceptional circumstances and where culture and sensitivity clearly indicate that there is no alternative appropriate antibiotic.

Veterinary surgeons should work to refine the way antibiotics are used on sheep farms by encouraging uptake by farmers of alternate methods of disease control wherever possible. These include biosecurity, vaccination, improved farm hygiene and other management actions. This document does not discuss every use of antimicrobials in the treatment of clinical disease though it is expected that specific areas that are not discussed in this document (eg mastitis, eye disease) are also covered in the health plan as relevant to the individual flock.

Currently across the UK sheep industry, areas where veterinary surgeons may be able to make the most impact to reduce, replace and refine the use of antibiotics on sheep farms are:-

- i. In lameness control
- ii. Whole flock antibiotic treatments for prevention of abortion
- iii. Preventative treatment of lambs against neonatal bacterial infections

Each of these specific areas is discussed in detail below:

## 1. Lameness Control

- Lameness in sheep is a common and serious welfare problem for many sheep flocks. In the UK lameness is largely due to infectious causes e.g. scald, footrot and contagious ovine digital dermatitis. It is entirely appropriate to promptly treat all sheep that are clinically affected with one of these bacterial infections with an antibiotic injection.
- The challenge is to reduce the number of new clinical cases of lameness that need antibiotic treatment. There are a variety of tools available for lameness control, **all** of which should be considered by vets and farmers when planning to tackle lameness in their flocks. These are usefully summed up in the principles of the Five Point Plan for Lameness Control<sup>(6)</sup>.
- These principles should be discussed between veterinary surgeon and farmer and tailored to the individual farm lameness problem. For example, it is necessary to take into account the specific causes of lameness on each farm (veterinary diagnosis is strongly recommended) in order to instigate specific treatments, as well as assess the farm specific risk factors for disease (e.g. seasonal trends, hygiene of housing, handling areas and field management).

THE FIVE POINT PLAN
1. Cull badly or repeatedly affected animals
2. Quarantine incoming animals
3. Treat clinical cases promptly
4. Avoid propagation of infection on farm
5. Vaccinate against foot rot biannually

Extract taken from “The Five Point Plan” <sup>(6)</sup>

- In order to minimise antibiotic use whilst ensuring the highest standards of sheep welfare, particular emphasis should be made of available preventative strategies for each farm including vaccination, flock security and hygiene measures.
- Responsible use of antibiotics for treatment of lame sheep should always be practised. To this end, we recommend that neither whole-flock antibiotic treatments nor antibiotic footbaths should be used in the treatment or control of lame sheep.
- In flocks with currently high levels of lameness, we would advise vets to work closely with farmers to separate out the group of lame sheep for thorough and effective treatment before they are mixed back in with the main flock.

### 2.1. Control of Abortion in Ewes

Abortions and stillbirths cause significant losses to UK sheep flocks. Enzootic Abortion of Ewes (EAE, caused by *Chlamydia abortus*) is the most commonly diagnosed cause in the UK, despite there being effective vaccines against this infection. Antibiotic treatment (long acting oxytetracycline) of ewes may help to reduce the number of ewes that abort but it

does not reduce shedding of Chlamydia, nor reduce the incidence of infected ewes within a flock. We advise that antibiotics should only be used for the control of EAE in certain defined situations as suggested below.

In the face of an outbreak of enzootic abortion, it is preferable to use an inactivated vaccine as soon as possible to reduce the spread of disease in the flock. If this is not possible, it is acceptable to treat the affected group of ewes with injectable long-acting oxytetracycline. It is also acceptable to use this antibiotic treatment for later lambing ewes within the flock, when they reach the period between day 90 and day 126 of that pregnancy.

In the year immediately following abortion due to Chlamydia, it is expected that either a live or an inactivated vaccine should be given to the whole flock by at least three weeks before the ewes are put to the ram (unless they were vaccinated in the face of the outbreak).

If it is expected that a number of ewes were exposed to Chlamydia following laboratory diagnosis in one season, it is expected that vaccination should have been undertaken before tupping but it is acceptable to also use antibiotic treatment in that group of ewes during their following pregnancy.

It is not acceptable to use routine antibiotic treatment in the period of late pregnancy as a control measure for abortion in general - i.e. in any flock **unless** in the face of an outbreak or if there has been a confirmed laboratory diagnosis of Chlamydia in the immediately preceding year.

## 2.2. General good practice advice with respect to abortion

- Discuss vaccination options with your vet
- If it is necessary to buy in replacements, then do so from as few flocks as possible & from flocks with a known disease history
- Avoid mixing ewes from different sources for the first time whilst they are pregnant
- Keep purchased ewes separate from home flock until after first lambing
- Store sheep feed in good facilities to prevent contamination by cats and other vermin
- Immediately isolate ewes seen to abort as well as ewes that give birth to stillborn or weakly lambs
- Immediately remove and destroy aborted material (unless it is required for testing) and infected bedding
- Ensure all staff are aware of the risks to pregnant women from sheep abortion agents
- Identify ewes that have aborted or had dead/weakly lambs for testing and/or culling
- Do not retain in the flock ewe lambs that were fostered onto ewes that aborted or had dead lambs
- Get a veterinary diagnosis if more than 2 ewes abort on one day or more than 2% of the flock abort in one season

### 3.1. Preventative treatment of neonatal lambs

In individual flocks and with close veterinary supervision, it may be appropriate to use targeted control measures that include antibiotic treatment, but in no flock, will it be appropriate for all lambs to be treated routinely from the start of a new lambing season.

Antibiotic treatments should be targeted only towards high risk individuals, following a proactive flock health plan.

Good management and planning is the key to reducing the risk of disease. Ahead of lambing time, ideally at mid pregnancy, control measures should be discussed between the farmer and veterinarian to give sufficient time to assess and implement new actions.

Investigation of suspected treatment failure should be based on bacteriological culture and monitoring of the sensitivity of the pathogen to the antibiotic used on an individual farm.

### 3.2 Watery Mouth & Colibacillosis

- Targeted oral antibiotic for prevention of watery mouth cases may be appropriate in the following situations:-
  1. Lambs born into groups where there have previously been recent clinical cases of watery mouth
  2. Triplet or low birth weight lambs that are born into challenging environmental conditions or towards the end of the lambing period.
- Whole-flock oral antibiotic treatment of all lambs at birth, in any flock, should be avoided.
- It is rarely appropriate to use unlicensed product for the treatment of lambs and in particular, it is not appropriate to use products that are not licensed for food-producing animals (for example oxytetracycline tablets).

### 3.3. Joint Ill

- Targeted injectable antibiotic for the prevention of joint ill in specific management groups may be appropriate in specific groups of high risk lambs in circumstances where the risk of disease is significantly high. This decision should be made in consultation between the owner and their vet.
- Whole-flock injectable antibiotic treatment of lambs in order to prevent joint-ill is very rarely appropriate as a routine management action.
- Current evidence, suggests that *Streptococcus dysgalactiae* is the most common cause of joint ill in lambs under four weeks old in British sheep flocks. However early detection and treatment is essential and it is always appropriate to undertake diagnosis to identify the causative pathogen and antibiotic sensitivity profile – by arthrocentesis of affected joint for culture and sensitivity and/or post-mortem examination of untreated animals. Ideally, multiple animals should be sampled to improve the chance of a diagnostic result.
- Clinical cases that are not treated promptly will respond poorly to antibiotic therapy. Culture and sensitivity results will inform the choice of antibiotic for treatment but it should be noted that oxytetracycline is seldom effective<sup>(4)</sup>. It is appropriate that severely lame

lambs, that show insufficient clinical improvement within five days of treatment, are euthanized.

- *Erysipelothrix rhusiopathiae* is another agent that can cause septic arthritis in sheep, typically this is in older lambs / adults and not in lambs less than one month of age. Preventative erysipelas vaccination will not be effective where the primary agent is *Streptococcus dysgalactiae* but the decision to use an unauthorised vaccination to prevent septic arthritis in older lambs, may be considered by the vet if *Erysipelothrix rhusiopathiae* is confirmed to be the cause of the joint ill and following due consideration of the risks and responsibilities associated with the prescription of an unauthorised product<sup>(7)</sup>.

### 3.4. General Good Practice Guidelines for lambing time

- Appropriate nutritional management of ewes, that primarily ensures energy and protein sufficiency but to include awareness of the relevance of appropriate trace elements, is required throughout the year. The aim is to ensure that ewes are in optimal body condition at lambing to provide good quality and quantity of colostrum and optimum lamb weights and viability at birth.
- Good ewe hygiene, through dagging or shearing pre-lambing, and effective control of lameness in the ewes.
- Facilitation of optimal colostrum intakes in neonatal lambs – aiming for 50ml/Kg BW as soon as possible after birth with a total of 200ml/kg within the first 24 hours.
- Good hygiene of the lambing environment, for both indoor and outdoor systems – with appropriate stocking densities and lie-back areas and lambing pens that are dry, draft-free and cleanly bedded with appropriate cleansing and disinfection between occupants.
- When lambing assistance is required, clean gloves should be used for all ewes and hands regularly washed.
- Maximum hygiene during husbandry procedures such as stomach tubing, ear tagging and castration or tailing (only undertake where necessary) & suitable cleansing and disinfection of equipment between individual animals.
- Minimum stress in neonatal lambs by provision of adequate shelter from inclement weather and with appropriate timing of husbandry tasks (for example when undertaken, castration & tailing should not occur before 24 hours old). Navels should be appropriately and effectively treated as promptly as possible after birth.
- Where there is any doubt about effective passive transfer of colostrum immunity, the situation should be monitored by testing blood samples from lambs under 5 days old (e.g. Zinc Sulphate turbidity (ZST) test or total protein)

## References

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