



Code of Good Practice regarding responsible use of Antimicrobials on Suckler and Beef Farms



These Guidelines have been developed by Irish Farmers and Veterinary Practitioners to guide good practice in the responsible prescribing and use of antibiotics in farm animals, in response to the global societal challenge of antimicrobial resistance





The Farmer's Role

Strategies to reduce the use of antibiotics and the development and spread of antimicrobial resistance (AMR)

Beef farmers have an important role in combating the growing problem of antimicrobial resistance. Antibiotics are used to treat disease and therefore disease prevention is key in reducing the need to use antibiotics in the first place. For disease to occur, several conditions must be met. These include host (cattle) factors, environmental factors (stresses) and factors dependant on the characteristics of the infectious organism. Manipulation of husbandry and management practices on a farm can go a long way toward tipping the balance against disease. Implementing these well recognised strategies will keep your herd healthier and reduce the need for antibiotics in the long run. Suckler and Beef farmers have a role to play in the fight against AMR. The practical strategies outlined in this document outline the important ways that beef farmers can make a difference in the fight against AMR.



Guideline 1: Prevention of disease is always better than cure.



Guideline 2: Herd Health Plans are an essential tool for Farmers.



Guideline 3: Reduce and Eliminate Disease entry to your farm through Biosecurity

- ▶ Have a planned and rigorous cleaning and disinfection routine



Guideline 4: Prevent diseases where relevant with vaccination.



Guideline 5: Keep animals stress-free through

- ▶ Good Husbandry Practices
- ▶ Good Housing and adequate space
- ▶ Plentiful access to clean drinking water



Guideline 6: Prevent and control parasites to enhance performance, reduce stress and prevent disease.



Guideline 7: Where treatment of disease is necessary with Antibiotics, observe the six 'rights' of prescription and use

- ▶ Right Veterinary Diagnosis
- ▶ Right Animal(s)
- ▶ Right Antibiotic
- ▶ Right Dose
- ▶ Right Duration
- ▶ Right Storage and Disposal

Practical strategies to reduce Antibiotic usage on Suckler and Beef Farms

How can Suckler and Beef Farmers prevent the development and spread of AMR?

- Greater Focus on Preventative Strategies
- Enhanced Biosecurity
- Improved Husbandry
- Increased Strategic use of vaccination
- Only use antibiotics on foot of veterinary advice
- Always use antibiotics as prescribed

Herd health planning

The aim of a herd health plan (HHP) is to ensure the best possible health and welfare of the cattle on the farm which, in turn, leads to optimum animal performance and productivity. The HHP should be devised as a collaborative effort between farmers and their veterinary practitioner. The plan is developed based on a unique personalised knowledge of the farm in combination with an on-farm risk assessment which includes inspection of facilities, routine examinations, review of selected herd performance records, and decisions and actions related to specific herd management issues.

The stages involved in a standard HHP include:

- ▶ Investigation and establishment of the herd health status.
- ▶ Plan to prevent disease on the farm.
- ▶ Plan to prevent the spread of disease.
- ▶ Regularly monitor the control strategies/ review the HHP

Dystocia (Difficult calving)

Dystocia in beef cows is defined as 'difficult calving'. Dystocia can occur during birth in all species of animals and for a variety of reasons. In beef cows common causes are oversized calves, incomplete cervical dilatation, malpresentation / breach presentation of calves, simultaneous presentation of two calves, or a variety of other issues such as uterine inertia (often caused by milk fever) and uterine torsion. Tears and lacerations in the uterus, vaginal walls and vulva are frequently the consequence of a difficult calving. Dystocia can result in loss of both cows and calves and should be avoided where possible. In particular, increasing the incidence of dystocia on farms, results in the need for more caesarean sections and ultimately the use of antibiotics directly associated with the caesarean section as well as an increased incidence of retained

placentas, metritis and other gynaecological injuries, all requiring increased antibiotic treatment. Dystocia also results in weak and stressed calves which are more susceptible to disease. Therefore, reducing the risk of dystocia should form part of a good farm breeding and management strategy on all farms. The following can be considered as good management practices to reduce the incidence of dystocia on beef farms.

- ▶ The most common cause of dystocia in beef cattle is an oversized calf. Bull selection (breed and possibly sire within breed) is critical and requires careful consideration in light of the desired outcome, personal and financial commitment to the calving process. The incidence of dystocia is 8 times higher in 1st calvers and 4 times higher in second calvers compared with mature cows. Therefore, the use of an easy calving sire is of paramount importance for heifers and young cows.
- ▶ Too early or frequent intervention by human hands can delay normal progression of first stage labour (cervical dilatation) especially in first time calvers. Good management policy is to not interfere with a calving heifer or cow for at least four hours provided progress is being made. Of course, forceful abdominal contractions when combined with lack of progress with the expulsion of the calf should always be investigated immediately.
- ▶ Ideally do not calve cows at a Body Condition Score (BCS) > 4 (scale 0-5) as the incidence of calving difficulty increases with body condition score.
- ▶ It is also advised to restrict the calving season to a period of not more than 12-13 weeks as not only could cow BCS gradually increase (e.g. spring calving cows at pasture), the levels of supervision that were there in the initial stages of the season may not be sustainable over time.

Early intervention by a veterinary practitioner is the only way to manage cases of dystocia as they occur. Careful sire selection, particularly for heifers and 1st calvers, having heifers well grown at time of first calving combined with close supervision and appropriate and timely intervention will minimise the risk of dystocia and significantly reduce the need to use antibiotics.

Health Management of Newborn Calves

Extensive studies by Teagasc have identified the importance of good colostrum management in calf health contributing significantly to reduced antibiotic usage in calves. Newborn and young calves are usually the most immunologically naive animals on the farm.

This means that their immune systems have not yet developed to the stage where they can recognise the common bacteria and viruses in their environment, and effectively fight them off. It is essential that they are given every form of protection to prevent them against the development of disease.

The most common diseases encountered by newborn calves on farms are gastrointestinal diseases. These can become more complicated and result in systemic diseases or septicaemia. Other conditions encountered are navel and joint infections. What these diseases all have in common is that they are caused by a combination of trademark factors, i.e. a naive immune system, poor (or no) transfer of antibodies from colostrum, a build-up of the infectious agents in their environment such as dirty pens, and other stressful factors such as moving or mixing calves between groups. Managing levels of disease in calves means addressing these factors. Reducing levels of disease in the calf cohort will significantly contribute to reducing the levels of antibiotics used during the calf-rearing period and will positively contribute to the fight against AMR. The following are essential guidelines that improve the health of calves:

- ▶ Colostrum is vital to calf health. It provides the calf with valuable antibodies but is also an excellent source of food and fluid for the calf. Farmers should follow the Animal Health Ireland (AHI) guidelines “**Colostrum 123 rule**”:
 1. The 1st MILK, and only the first milk the cow produces, should be used to feed to the newborn calf for its first feed.
 2. Ensure calves feed/are fed within 2 HOURS of birth as antibody absorption is highest at this time.
 3. Feed a minimum of 3 LITRES to ensure the calf receives enough antibodies.
- ▶ Consider vaccinating cows against calf diseases - in particular, certain types of scour. This will result in higher levels of antibodies against this disease in the cow's colostrum and will contribute significantly to protecting the calf from this disease in the first few weeks to months of life.
- ▶ The main source of bacteria for a calf is cow manure. Practicing approved hygiene protocols at calving dramatically reduces the risk of infection, including naval treatment (tincture of iodine) immediately after birth. Clean and disinfect calving pens and calf pens between calvings to prevent disease build up and spread.
- ▶ Treatment for scours is very similar regardless of the cause. It should be directed toward correcting dehydration, acidosis and electrolyte loss. Many of the pathogens which cause scour are viruses. Antibiotics do not kill viruses. Antibiotics are very rarely indicated in scouring calves and should only be considered following a specific veterinary

diagnosis and under specific veterinary instruction. Antibiotics can further damage the gut bacteria and be counterproductive if incorrectly used.

Weanling Pneumonia

It is commonly accepted that weaning is a high-risk time in a beef animal's life for succumbing to disease - in particular, pneumonia. It is vital that farmers understand the reasons for this so that they can mitigate against losses at this time. Weanlings, unlike neonatal calves, are not entirely naïve in their immunity to infections. They have been with their mothers and enjoyed the benefits of her milk and protection from the environment. It is worth remembering however that they are young animals nonetheless and require extra care at this very stressful time. The stress suffered by these animals at this time can generally be attributed to the following: loss of their mother's milk, loss of the bond and safety that she provided, a sudden change of environment, a change in diet, mixing with animals from a new group, and transport. It is easy to understand why the immune system of these young animals is often compromised to a level which is not able to deal with the amounts of respiratory viruses they can encounter at this time. To prevent outbreaks of pneumonia in groups of weanlings, some basic preventative measures can be followed:

- ▶ Increase their natural resistance to infection by maximising the health of the cohort before weaning. This can be achieved by making sure that they have a good plane of nutrition and are on concentrates prior to weaning. It is also advisable to ensure optimum parasite control while at pasture.
- ▶ Management of hoose (lungworm) is of importance in the management of weanling pneumonia. Hoose can develop quickly in groups of weanlings at pasture, especially during periods of warm, damp weather. It is advised to implement a good grazing system and follow best practice guidelines regarding the use of appropriate anthelmintics. In weanlings infested with hoose the lung is structurally damaged and the immunity of the lung is compromised, therefore, increasing the risk of developing viral and bacterial pneumonia in these animals as well as contributing to delayed recovery times in individuals.
- ▶ Avoid other sources of stress in the group at weaning, e.g. do not castrate or dehorn the animals within two weeks of or after weaning.
- ▶ Ideally wean outdoors, but if weaning into sheds ensure that the conditions in the shed are very comfortable, e.g. lots of loose straw bedding, adequate ventilation, and avoid overstocking or mixing strange groups if possible.
- ▶ Discuss the incorporation of a vaccination protocol in your herd health plan with your veterinary practitioner. Treatment of pneumonia is costly, as

well as the impact of the disease on the animal's growth rate and productivity. It is extremely difficult to avoid stress at weaning and, therefore, vaccination should be considered as a prevention tool. Common infectious agents which have been implicated in outbreaks of weanling pneumonia in Ireland are IBR, RSV, PI3, *Pasteurella* sp., *Haemophilus* sp., and *Mycoplasma* sp.

- ▶ Outbreaks of pneumonia in weanlings should always be investigated with the assistance of your veterinary practitioner and Regional Veterinary Laboratory.
- ▶ Early detection of disease is vital in the case of weanling pneumonia from the point of view of treating the individual affected animal and, importantly, containing an outbreak. Early signs can be non-specific, such as an animal who is staying away from the others in the group or possibly coming last to the trough. Often weanlings with pneumonia look normal until the disease is quite advanced. For this reason, it is essential to be extra vigilant in the early stages of weaning. It is advised to regularly check the temperature of the animals in the group. In the early stages of the disease the temperature will be raised even though the animal will appear perfectly normal.
- ▶ If it is your practice to buy in weanlings, then it is advisable that you perform a risk assessment in conjunction with your veterinary practitioner and aim to minimise disease occurrence in the group of animals. Ideally, purchase weanlings from a known source and ideally have them weaned, eating meals and vaccinated before they leave their farm of origin.

Lameness

Controlling lameness in the herd to an acceptable level will reduce the overall antibiotic consumption. Managing lameness in the herd can be achieved by following the guidelines below:

- ▶ Provide an environment and conditions for the cows that are comfortable, clean, and safe.
- ▶ All walking surfaces should be kept clean of manure build-up and be non-slip and comfortable.
- ▶ Correct trimming of overgrown hoofs is an essential component of lameness control and cow comfort.

Vaccination

Some important principles about vaccination should be considered before deciding on a vaccination strategy for any farm:

- ▶ A vaccination programme should be tailored to each farm and devised in conjunction with your veterinary practitioner who has detailed knowledge of the animals and operation of your farm. Vaccines are available for a variety of bovine diseases. Not all of them are required or will be useful on every farm.



- ▶ Often, vaccines will require repeat administrations, or annual “boosters” to ensure that the level of antibodies in the blood, and indeed in the cow's colostrum, will be adequate to fight off the infection should it be encountered. This information is available on the datasheet, or summary of product characteristics. Always administer the booster, if required.
- ▶ Correct storage of vaccines is essential. In general, cold storage applies, and most vaccines will need to be stored in a fridge. They are inactivated by heat and sunlight (e.g. the car dashboard) and are also inactivated by freezing. Vaccine failure has regularly been attributed to poor storage conditions. Ensure your fridge is working properly.
- ▶ The use-by date on vaccines must be strictly adhered to, as vaccines are not effective after this date. Once

opened it is essential that they are used within the recommended timeframe indicated on the datasheet.

Using vaccines to their maximum effect as part of a herd health plan will improve the productivity of the herd, will minimise the burden of disease and reduce the requirement for antibiotic usage.

Parasite Control

Optimum internal and external parasite control will improve the growth rate and productivity of cattle, as well as maximising the herd's ability to fend off other infections and remain healthy. It is important to get expert advice before using anthelmintics on your farm. Anthelmintic and antiparasitic resistance are now key concerns for animal health and identifying which parasites are a threat to the herd, and how to manage them, should always be done in consultation with your veterinary practitioner.

It is important to be familiar with the clinical signs shown by cattle suffering from the variety of parasites commonly found in the local area. Common signs like coughing, scour and weight loss should always be investigated for a parasitic cause or anthelmintic treatment failure before antibiotics are considered as part of the treatment options.

Biosecurity and Biocontainment

Biosecurity is the term used to describe the implementation of a set of management practices designed to keep disease out of a farm. Where disease does occur, biocontainment is the term used to describe management practices to keep it from spreading between animals on the farm.

A good biosecurity and biocontainment protocol should include the following:

- ▶ Ensure that disinfection facilities are provided to all

farm visitors.

- ▶ Keep a closed herd if possible.
- ▶ Buy from known disease-free or closed herds as much as possible.
- ▶ Always isolate purchased animals or animals that have participated in shows for at least 28 days to monitor for signs of disease.
- ▶ Sharing of equipment between farms should be avoided unless it can be thoroughly disinfected.
- ▶ A farm's biosecurity plan should be reviewed annually with your veterinary practitioner as part of an overall herd health plan, and as farming practices may have changed.

Air Quality and Ventilation

Good air quality is an important factor to maintain health and well-being in housed animals. Air quality is determined by the quantity of gases, dust particles, and air-borne bacteria and virus within the housing facilities. Good air quality will be achieved by combining appropriate ventilation with good hygiene practices in sheds, both of which should be investigated as part of your herd health plan. Poor air flow, a build-up of waste gases, draughts, and increased levels of disease-causing organisms will overwhelm an animal's immune system and result in disease.

Cleaning and Disinfection

Cleaning and disinfection are the most important of all disease control measures. Removing or killing the infective agents as quickly as possible once they emerge on the farm is key to preventing the spread of disease, and by extension, the need for drug therapy. It is important to ensure that the correct disinfectant is used, i.e. one that is licensed to treat the diseases of concern, and that the use of the disinfectant is in line with the manufacturer's instructions.

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