Using medicines correctly for Better Returns

Medicines

- Animal medicines improve health and welfare of food-producing animals and contribute to the provision of safe, secure and sustainable food
- Antimicrobial resistance (AMR) and anthelmintic resistance are both causes for concern in agricultural industries globally
- At present, AMR is considered to be of greater risk to human health than to animal health
- The number of bacteria becoming resistant to antibiotics is increasing
- We must use antibiotics responsibly

Responsible use

Antibiotic use in animal can be divided into three categories:

- **Curative or therapeutic –** treatment of a sick animal or group of animals after diagnosis of disease or infection

- **Control or metaphylatic –** treatment of a group of animals after diagnosis has been made in part of the group. The aim is to treat clinically sick animals and control spread of disease by treating others in close contact

- **Preventative or prophylactic –** treatment of an animal or groups of animals before clinical signs of disease. The aim is to prevent disease or infection

Preventative or prophylactic use of antibiotics should not be routinely practiced and should not compensate for poor hygiene or inadequate husbandry.

Responsible use

The golden rule for antibiotic use:

‘As little as possible but as much as necessary’

Best practice for the use of animal medicines

- Use the correct medicine for the job
- Use it at the correct time
- Use the correct dosage for the weight of the animal
- Complete the full course prescribed by the vet
- Administer the medicine correctly
- Only use medicines that have been stored correctly and are not contaminated by dirt or other medicines
- Do not use medicines past their expiry date
- Record date, dose, animal, withdrawal period
- Dispose of unused medicines safely
- Adhere to withdrawal periods

Correct medicine

Antibiotics are categorised into different groups according to chemical structure and the way they kill or halt the growth of bacteria:

- Narrow-spectrum antibiotics – only effective against particular bacteria
- Broad-spectrum antibiotics – effective against a range of bacteria

Some antibiotics have been classified as **critically important antibiotics (CIAs)** for use in humans. Vets are advised to only use these antibiotics as a last resort. For more information on CIAs refer to ‘CIAs in veterinary medicine – European Medicines Agency (EMA) recommendations’, available at **noah.co.uk**

Correct medicine

Antibiotics vary in the way they are distributed in the body, how long they remain active and how long they persist.

Antibiotics also differ in the way they are formulated and administered:

- Injectable
- Intra-mammary
- Eye ointment
- Topical sprays
- Powder for adding to feed or water

All antibiotics for animals are prescription-only and vets are the only people allowed to prescribe them. Vets decide on the best type of antibiotic for the specific issue.

Correct medicine

Antibiotic sensitivity testing

- Whenever possible, samples should be taken from sick animals and tested for antibiotic sensitivity to see which antibiotics will be most effective

Anthelmintics

- Categorised according to which parasites they are effective against
- It is important to monitor how effective anthelmintics are on farm. This is easiest through Faecal Egg Counting (FEC) to ensure the most effective anthelmintic is being used
- Many farms already have some anthelmintic resistance

Avoid overuse of medicines

Overuse of medicines on farms can occur where they are used as a preventative measure.

Use the right amount

- Getting the dosage right is very important
- Underdosing = drug may not work
- Overdosing = many medicines are toxic if too much is given (It also increases the withdrawal period)

Complete the course

- Ensure courses of antibiotics are completed as even when an animal appears better, some bacteria may have survived causing relapse
- The surviving bacteria are also least susceptible to the antibiotic which leads to selection of resistance strains

Administration

Seven main routes to administer medicines:

1. Subcutaneous injection (S/C or sub-cut), under the skin
2. Intramuscular injection (I/M), into the muscle
3. Intravenously (I/V), into the vein (this is a vet-only procedure)
4. Oral drench
5. Pour-on, onto the skin
6. Intramammary, up the teat (for mastitis or dry cow treatments)
7. Topical (spray, eye ointment)

Incorrect S/C and I/M injections or using dirty or blunt needles can cause abscesses. Time is spent cutting these out of the carcase and meat yield is reduced = reduces payment!

Follow the administration instructions on the medicines label and note the meat and milk withdrawal periods.

Administration - training

If you administer medicines to animals you should be trained in injecting and drenching technique by attending a course or asking a vet.

When administering medicines consider:

- **Cleanliness** - new, sterile needle
- **Size of needle** - use a short needle for S/C injections and a longer needle to I/M injections
- **Correct animal restraint** - prevents injury to humans and animals and prevents risk of the needle breaking off
- **Volume of product** - there is a maximum volume that can be injected into one site on the animal. Split large volumes between injection sites

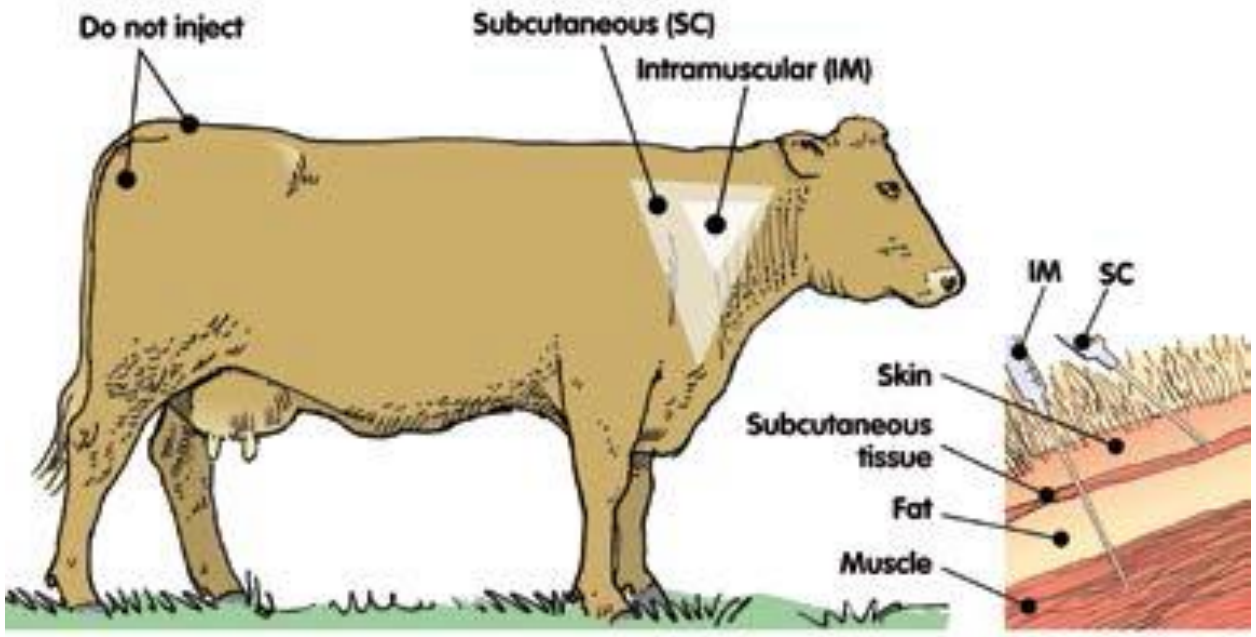
Injection techniques

Subcutaneous injections

- Where the skin is loose – mainly neck or behind the shoulder
- Grasp a fold of skin and slide the needle through the skin parallel to the neck or trunk
- After injection, briefly massage to ensure dispersal of medicine

Intramuscular injections

- Muscle mass of the neck
- Restrain animal to prevent injury
- Insert the needle only with a sharp slap action and then connect the syringe to inject the medicine



Medicine use

Correct storage

- Medicines have specific storage instructions which should be followed as medicines can be sensitive to light and temperature
- Fridges should be 2°C-8°C
- Vaccines are particularly sensitive and can be ineffective if stored incorrectly

Broaching

- Broaching is the opening of a medicine bottle for the first time
- Record when you open the bottle as medicines have a shelf life whereby they may be ineffective after a certain amount of time

Medicine use

Disposal

- Medicines, needles and syringes should be disposed of safely
- Vets can provide Disposal of Old Pharmaceuticals (DOOP) bins

Recording usage

- Keeping records of medicine purchase and use is a legal requirement
- It is also the only way to track withdrawal periods
- Also useful for monitoring disease outbreaks

Biosecurity

- Buying-in animals is one of the biggest risks for bringing disease onto farm
- Know the health status of bought-in animals

Health plans

- Herd or flock performance should be reviewed with a vet and a health plan generated
- Review health plans regularly to make informed decisions about general management and medicine use on farm
- Include monitoring activities such as worm egg counts

Vaccines

Vaccines stimulate an immune response without infecting an animal with disease. They work best when a whole group is vaccinated.

Diseases that sheep can be vaccinated against:

- Clostridial diseases, eg lamb dysentery, pulpy kidney, tetanus, braxy, blackleg
- Pasteurellosis
- Ovine abortion, eg Toxoplasmosis and Enzootic Abortion
- Louping ill
- Contagious pustular dermatitis (Orf)
- Footrot

Diseases that cattle can be vaccinated against:

- Clostridial diseases, eg blackleg and tetanus
- Respiratory diseases, eg Infectious Bovine
- Rhinotracheitis (IBR), Para Influenza 3, Respiratory Syncytial Virus (RSV), ‘Husk’ (lungworm disease) Enteritis, eg Rotavirus, Coronavirus, *E. Coli*
- Pasteurellosis
- Leptospirosis
- Mastitis
- Ringworm
- BVD
- Salmonella

Medicine labelling

All medicines prescribed by the vet will have a label on stating:

- Date of dispensary
- Expiry date
- Name and quantity of drug dispensed
- Who dispensed the drug
- Farmer’s name and address
- Batch number
- Withdrawal information

Information on the medicine box or bottle will include:

- Species the medicine is licensed for
- Infections medicine treats
- Dose rates and administration routes
- Need for withdrawal period recording
- Possible adverse reactions
- Warnings for those administering the medicine
- Storage information
- Class of drug