

Antimicrobials in the livestock sector

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Who are the AHDB?

- Cross sector agricultural organisation, covering plant (horticulture, potatoes and cereals & oilseeds) and livestock (pigs, dairy and beef and lamb)
- Established to help advance the sectors through innovation, research and technical knowledge exchange.
- Funded through a levy raised by producers in each sector, with spend being sector specific.

A photograph of a dairy milking parlor. Several cows are visible, some with milking machines attached to their udders. The equipment includes blue hoses, metal pipes, and milking cups. The scene is brightly lit, and the overall atmosphere is clean and industrial.

The Dairy Sector

AHDB Dairy

Antibiotic Use in the Dairy Industry

- Used to treat and prevent disease
- Reduce morbidity and mortality
- Administered routinely to entire herds at drying off to prevent Mastitis
- Other uses include; Calf Enteritis, Pneumonia, Lameness, Reproductive disorders.



Problems arising from Antibiotic Use

- In 2013 14 tonnes antimicrobial active ingredient sold in products intended for sole use in cattle (VMD, 2013)
- Antibiotic use can cause public health and food safety concerns due to:
 - Risk of residue consumption
 - Inappropriate use reducing efficacy of similar antibiotics in humans
- More selective methods of treatment are required to prevent increased antimicrobial resistance developing

Factors to Consider

- Responsible use: - when to treat/not to treat
- how much & for how long
- Do we focus enough on early detection/prevention?
- Which is more important?– improving genetics Vs improving production systems
- Why is ‘best practice’ not ‘normal practice’?
- What are the barriers for change





The Beef and Lamb Sectors

AHDB Beef and Lamb

Key Points of AMR issues in Beef Production

Anti-Microbial Use	Problems Associated with Use
Management of respiratory disease	<ul style="list-style-type: none">- Determining when to treat affected animals (Metaphylactic Vs Prophylactic)- Commonly used Macrolide and Fluroquinolone are on restricted list for human medicine
In feed & artificial calf rearing systems	<ul style="list-style-type: none">- Shared teats in robot feeding systems can act as fomites- In order to prevent the spread of infection, antimicrobials are in constant use- Enteric exposure to antimicrobials in calves increases the risk of new multi-resistant strains developing

Key Points of AMR issues in Sheep Production

Group	Antibiotic Use	Purpose of treatment	Problems Arising from Antibiotic Use
In-lamb ewes	Reduce impact of abortion storm	Metaphylactic	<ul style="list-style-type: none"> - Varied effectiveness - Vaccines can sometimes offer an alternative
Neonatal Lambs	Prevent watery mouth	Metaphylactic	<ul style="list-style-type: none"> - Resistance reported - Following best practice guidelines can reduce need
Lame animals	Treat lameness	Therapeutic	<ul style="list-style-type: none"> - Favoured for treating footrot - Less focus on prevention
Animals infected with Mastitis	Treat Mastitis	Therapeutic	<ul style="list-style-type: none"> - More focus should be placed on prevention and control strategies

A large group of white piglets is shown in a field of straw. The piglets are of various sizes and are scattered throughout the frame, some looking towards the camera and others looking away. The straw is a light brown color and appears to be a bedding or feed material. The overall scene is bright and somewhat overexposed, giving it a soft, ethereal quality.

The Pig Sector

AHDB Pork

Antibiotic Use in the Pig Sector

- Used to treat disease and to prevent spread
- Used to reduce morbidity and mortality
- Predominantly used against gastrointestinal and respiratory infections
- Mainly oral medication (unlike in ruminants)
- Predominantly In feed medication in the UK
- Exact levels used unclear (Pig and Poultry)

What are we doing

- Establishing a Pig Industry Medicines Hub to measure on farm usage
- Investigating approaches to antimicrobial stewardship internationally and adopting best practice when found
- Supporting R&D and providing on farm 'proof of principle' trials for levy payers
- Encouraging, informing and measuring 'behavioural change' across the pig industry

What the livestock sector needs – We need you!

- Improved diagnostic tools: *(pen-side/on farm) to inform diagnosis and antimicrobial use*
- Alternative therapeutics: *such as new vaccinations*
- Novel therapeutics: *bacteriophage therapies, anti-quorum sensing treatments...etc.*
- Preventitive strategies: nutrition, cleaning & disinfection, waste, water and environmental management