



22 February 2018

Position Statement

Responsible Use of Antibiotics in the Australian Chicken Meat Industry

What's the Issue?

Antimicrobial resistance (AMR)

The use of antibiotics in both humans and animals is receiving considerable attention globally because antibiotic use can select for antibiotic resistant strains of bacteria. This can lead to treatment failure in humans.

Antimicrobials are a broader class of medicines that includes antibiotics. Antimicrobial refers to any type of product or compound that is active against (ie kills or inhibits the growth of) a variety of microorganisms, which could include bacteria, fungi and parasites. Antibiotics are a sub-set of antimicrobials, in that they are specifically active against bacteria that cause disease in humans or animals.

Some microorganisms (including bacteria) are naturally, or inherently, resistant to certain antimicrobial medicines. However, some microorganisms which were originally susceptible to an antimicrobial medicine, such as an antibiotic, can acquire resistance to the medicine through exposure to it. Once this happens, this particular antimicrobial medicine may be ineffective in treating an infection caused by that microorganism.

Antimicrobial resistance (AMR) is a serious global threat.

While most antimicrobial resistance results from the use of antimicrobials in human medicine, use of antimicrobials in animals and agriculture can potentially also contribute to the risk.

The concern with respect to the development of AMR as a result of antimicrobial use in animals and agriculture is three-fold:

- In the case of animals used for food, that resistant organisms may enter the food chain in raw or undercooked food products. NB normal cooking temperatures kill foodborne bacteria, whether they are antibiotic resistant, or not.
- In the case of all animals, including pets, that there may be transfer of resistant organisms to humans, either through direct contact with them or their environment.
- A third potential concern relates to use in agriculture more broadly, whereby antimicrobials may contaminate the environment and lead to the development of resistant organisms.

While exposure to a resistant microorganism doesn't usually result in illness, in all scenarios above, including development of resistance due to use in humans, the ultimate concern is that people may pick up resistant microorganisms and at some later stage require treatment for an illness which doesn't respond to treatment because the organism responsible for the illness is resistant to the drug of choice.

The chicken industry has a role to play in reducing these risks.

Antibiotic residues

An antibiotic residue is a small amount of antibiotic that remains in the edible tissues of a treated animal after the main part has gone or been used or excreted. Residues are managed by the use of withholding periods, to ensure that antibiotics have been sufficiently degraded and/or metabolised by the animal before they are slaughtered for human consumption. Several antibiotics used in poultry are not absorbed from the gut and do not leave residues and no withholding period is necessary.

The practice of enforcing appropriate withholding periods ensures there are no unsafe residues in meat or other products destined for sale for human consumption.

Are antibiotics used in the chicken industry and why?

We have an obligation to ensure animals in our care are free from disease and as healthy as possible.

To not treat sick birds would compromise their welfare, by allowing them to suffer. Disease prevention and control is likewise a key responsibility to the chickens in our care.

In order to manage disease, poultry veterinarians need to have access to appropriate tools. These tools include preventative measures, such as farm hygiene and vaccines, where they are available, but can include antibiotic / antimicrobial treatment where there is no other viable, effective solution.

In what circumstances are antibiotics used?

Australian chicken producers may in certain circumstances use antibiotics to treat or control infections in flocks, or to prevent diseases occurring where there is a high risk of a disease occurring.

Because our concern is for the health and welfare of our chickens, the chicken industry in Australia voluntarily agreed years ago to implement a policy of no use of antibiotics for growth promotion. If used at all, they must only be used to treat, control or prevent disease.

Furthermore, no antibiotics that have been determined by the World Health Organisation to be critically important in human medicine (WHO, 2016)* are used routinely in chicken production.

- These important antibiotics, in those very few cases where they are even permitted for use in poultry, are only used as a last resort.
- They are seldom used.

What about anticoccidials?

Young chickens are prone to a severe intestinal disease, called coccidiosis, which is caused by tiny protozoan parasites called coccidia. Coccidiosis is common in all young poultry flocks kept on the ground, rather than in cages, as is the case for all meat chickens in Australia. Infection with these parasites results in severe gut damage and often death. This necessitates the use of certain classes of medication in the chickens' feed, called ionophores or coccidiostats, to prevent inevitable outbreaks of this disease. Ionophores are used

globally for the control of coccidiosis, not just in Australia. Because these medications in some cases can also have some antibacterial activity against gram positive bacteria, they are sometimes classified as ‘antibiotics’, but in many countries they are not because their mode of action is very different from antibiotics used in human medicine. Virtually all meat chicken flocks will be treated at some point with one of these medicines. These medications are *not used in human medicine*, and their use in poultry has no consequence for human health, as confirmed by the Australian government’s Australian Strategic and Technical Advisory Group on AMR (ASTAG)**.

What about free range?

Because of the high risk of coccidiosis, almost all flocks generally receive anticoccidials. Antibiotics are otherwise not generally used in Free Range Egg and Poultry Australia (FREPA) accredited flocks and are only used reactively to treat flocks if they become unwell. If FREPA accredited chicken flocks become unwell and veterinarians prescribe antibiotics, these treated chickens cannot be sold as free range.

What controls on use are there?

Only medicines assessed and approved by the national regulator of veterinary products (the APVMA) are used.

- This ensures that all medicines used (including antimicrobials), and the way that they are used, is safe for both people and animals.
- Any restriction that the regulator applies to the use of a particular medicine to ensure its safe use, such as withdrawal periods, must be adhered to.
- Any approved products classified as antibiotics, that also have a use in human medicine, can only be prescribed by a veterinarian having sufficient knowledge of the flock and its health status.

Notably, Australia was one of the first (and remains amongst the minority of) countries to have adopted antimicrobial resistance risk analysis as part of regulatory processes involved in registering veterinary medicines, alongside Canada, the EU, Japan and US. This is not a once-off assessment. The registration status of particular products is formally reconsidered if new scientific information raises concerns relating to the safety or effectiveness of the medicine.

Three of the five antimicrobial agents for which resistance development poses the greatest global concern from a human health perspective (classified by the WHO (2016)* as the *Highest Priority of the Critically Important Antimicrobials*) – 3rd and 4th generation cephalosporins, polymyxins and quinolones – have never been approved for use in Australian poultry, and therefore never used in Australian chicken flocks. Another of the *Highest Priority Critically Important* classes of antibiotics – the glycopeptides – *have not been registered or used in poultry in Australia since 2000*. Only one class of antimicrobial in this category – macrolides – is approved for use in chickens in Australia, but since the introduction of effective vaccines for control of *Mycoplasma*, a previously major cause of chicken respiratory disease, macrolides are now rarely used.

How do we know Australian chicken meat doesn’t have residues?

The chicken industry participates in the National Residue Survey, a government managed monitoring program that tests chicken samples for antibiotic residues to confirm that we meet the Australian standards.

Consumers can therefore be confident that they are not being exposed to risks from antibiotic residues when eating Australian chicken meat.

How is the chicken industry responding to the issue of AMR?

The chicken industry agrees that antimicrobial resistance is an issue of global significance.

It recognises that the industry has a role to play in preventing the development of AMR, and a responsibility to only use antimicrobials in a way that minimises its potential contribution to the development of antimicrobial resistance.

- In this respect, antimicrobials which are classified by the WHO* as *critically important* in human medicine must be the primary focus of our efforts.
 - No antibiotics that are considered to be *critically important* in human medicine, according to the World Health Organisation, are routinely used in chicken production.
 - These important classes of antibiotics will only be used as a last resort in the treatment or control of infections in flocks; they will not be used for disease prevention in the absence of clinical signs in the flock to be treated.

We nevertheless take the use of all antibiotics very seriously and support the following principles and practices:

- Only products assessed, approved and registered by the Australian regulator of veterinary products (the APVMA) for use in chickens are to be used.
 - Any products classified as antibiotics, that also have a use in human medicine, are only used under strict veterinary supervision.
- Additionally, our members have agreed to adopt a policy of only using antibiotics for the purpose of treating, controlling or preventing disease; they must not be used for growth promotion purposes.
 - To align with this policy, the ACMF has actively worked with veterinary medicines suppliers over the past ten years towards the ultimate goal of removing growth promotion as a permitted use of antibiotics registered for use in meat chickens in Australia.
- Veterinarians responsible for the care of Australian chicken flocks adhere to judicious use principles. Antimicrobials, including antibiotics, if they are used, have to be used judiciously and in a way that does not compromise human health.
 - As part of this program, chicken producers endeavour to use alternative practices and to adopt new technologies that reduce the use of antibiotics, particularly those antibiotics for which resistance could pose the greatest global risks.
 - Judicious use does not mean no use. It is not 'judicious' to not treat birds that have succumbed to an infection for which there is no alternative treatment option, nor to allow them to succumb to treatable or preventable illnesses.
- The industry has been at the forefront of efforts to develop alternative approaches to managing chicken health, with a particular focus on preventative approaches.
 - It has directly contributed to the development of, and was the first country to use, two world-leading vaccines for key bacterial diseases of poultry, which have significantly reduced the need for treatment of bacterial disease.

What else is the chicken meat industry doing?

- The chicken industry continues to actively pursue research into alternative strategies, biosecurity and improvements in animal husbandry so as to reduce further the need to use antimicrobials and improve the overall health status of Australia's meat chicken flocks.
- It is currently collaborating with the Australian government in a national survey of antimicrobial resistance in Australian meat chickens. The survey is due for completion end-2017.
- The industry is committed to an ambitious antimicrobial stewardship program, with the support of veterinarians who oversee the health and any treatment of all meat chickens grown by the major chicken producers in Australia.
 - The objective of this program is to ensure best practices are used at the farm level to minimise the use of antimicrobials, and to use the most appropriate antimicrobials in terms of minimising impacts on AMR and human health, while ensuring proper animal care.
 - Stewardship principles are a key part of ethical livestock management. They serve to ensure appropriate animal care that minimises animal disease and suffering while also ensuring judicious antimicrobial use that minimises antimicrobial resistance development, thereby preserving their effectiveness for humans and animals alike. Integral to the Stewardship program is the recognition that effective antibiotics are a precious resource that the industry has a role to play in protecting for future generations.

* **“Critically important antimicrobials for human medicine, 5th revision”** (WHO, 2016)

[\(http://www.who.int/foodsafety/publications/antimicrobials-fifth/en/\)](http://www.who.int/foodsafety/publications/antimicrobials-fifth/en/)

The WHO list of critically important antimicrobial ranks the importance of antimicrobial treatments in human medicine. It is based on the following criteria for categorisation:

Criterion 1: An antimicrobial agent which is the sole, or one of limited available therapy, to treat serious human disease.

Criterion 2: Antimicrobial agent is used to treat diseases caused by either: (1) organisms that may be transmitted to humans from non-human sources or, (2) human diseases caused by organisms that may acquire resistance genes from nonhuman sources.

The definition of different categories of importance in human medicine are as follows:

Critically Important: Antimicrobial classes which meet both Criterion 1 and Criterion 2 are termed *critically important* for human medicine.

Highly Important: Antimicrobial classes which meet either Criterion 1 or Criterion 2 are termed *highly important* for human medicine.

Important: Antimicrobial classes used in humans which meet neither C1 nor C2 are termed *important* to human medicine.

NB Antimicrobials which are not listed are those that have no use in human medicine.

** Australian Strategic and Technical Advisory Group on AMR (ASTAG) **“Importance Ratings and Summary of Antibacterial Uses in Humans in Australia”** Version 1.1, February 2015)

([https://www.health.gov.au/internet/main/publishing.nsf/Content/1803C433C71415CACA257C8400121B1F/\\$File/ratings-summary-Antibacterial-uses-humans.pdf](https://www.health.gov.au/internet/main/publishing.nsf/Content/1803C433C71415CACA257C8400121B1F/$File/ratings-summary-Antibacterial-uses-humans.pdf))

“Antibacterial drug classes which are not used in humans and with no cross-resistance known to classes of antibacterials used in humans include ... ionophores...”.