



The future health of flocks without routine antibiotic use



Whitepaper
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It is not so long ago that antibiotics were routinely used on broiler farms to promote growth and keep pathogens at bay. Chicks were often dosed with a starter antibiotic, such as Linco Spectin or Amoxycillin, for the first three days of the cycle, and this made a significant and positive difference to week-one mortality rates. Mortality rates could be as little as 1% with the use of a routine preventative dose, as opposed to 6-7% without it. This practice was expensive but highly effective in eliminating the threat that pathogens pose to the healthy development of broiler chicks.

However, routine administration of antibiotics is now an outdated practice, due to its clear links to antimicrobial resistance (AMR), not just in the animals it is administered to, but in humans too, via the food chain. Farmers have even gone on to adapt their animal welfare practices to [tackle enterococcus without antibiotics](#). The likelihood of AMR increases when antibiotics are overused, so using them responsibly is crucial in ensuring these life-saving medicines continue to work in both humans and animals.

Working towards responsible antibiotic use

Widespread use of antibiotics as a growth promoter is now banned in many regions around the world, and in 2022, the EU prohibited all forms of preventative antibiotic use in farming. Whilst it is still technically legal to give antibiotics to farm animals routinely in the UK, many of the retail outlets discourage the use in their supply chains, and the UK remains one of the lowest users of antimicrobials in livestock in Europe through voluntary schemes such as Red Tractor.

The Red Tractor assurance scheme has had guidelines about the use of antibiotics for some years: antibiotics can only ever be used for specific treatment of disease, and only under the direction of a vet where a formal diagnosis has been made. Use of 'highest priority critically important antimicrobials' (HPCIs) must be a last resort, in order to minimise the risk of resistance to these antimicrobial substances which have been identified as essential for the treatment of specific infections in humans.

World leading antibiotic stewardship in the UK

The UK is at the forefront of international efforts to keep antibiotics effective for future generations and tackle antimicrobial resistance. In November 2022, the UK government's Veterinary Medicines Directorate (VMD) confirmed that sales of antibiotics for use in livestock have reduced by 55% since 2014 to the lowest-ever recorded level.

In 2020, the British Poultry Council (BPC) released its Antibiotic Stewardship Report, which stated that between 2012-2019 the BPC Antibiotic Stewardship has helped achieve:

- 76% reduction in the total use of antibiotics
- 97.3% reduction in the use of critically important antibiotics

76%
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of antibiotics

97%
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The toll of the new regime

All this is good news, but let there be no doubt, this reduction in antibiotic use has taken its toll on flocks, and first-week mortality rates have risen from 1% in the first 4-5 days of a cycle, to between 3-5%. The industry is working hard to maintain extremely high levels of biosecurity and animal husbandry to keep pathogens at bay, but nevertheless, there are more incidents of e-coli, enterococcus, and other harmful bacteria in chicks.

The reality of the new antibiotic-limited regime is that, when something nasty takes hold, a farmer must call in the vet, who will need to take swabs before making a diagnosis and prescribing antibiotics – all this could take days. In a large shed, thousands of birds could be lost by the time antibiotics start to take effect. This obviously presents an economic loss, but it is also distressing to watch and goes against a farmer's duty and desire to address health and welfare issues in his flock.

New ways to protect a flock

The move away from antibiotics leaves already-stretched farmers looking for ways to help protect their flocks from health crises previously kept at bay by the routine use of the likes of Linco Spectin. Nutrition seems an obvious avenue to pursue, as the poultry industry has led the way in harnessing nature to boost nutritional health and natural immunity in birds to help them fight against infection and disease.

Using nutrition to achieve optimum 'fighting fitness' in a flock is something we firmly believe in at Interhatch. More specifically, we have written about using phytochemicals to manage coccidiosis in broilers. Phytochemicals are biologically active compounds that can be used to naturally guard against common flock ailments. We have also previously written about the power of the humble onion and garlic bulb in the form of a phytochemical feed additive called [Alliguard](#). [Alliguard](#) has been used as a powerful preventative barrier in the gut against pathogens such as Staphylococcus, Enterobacteriaceae, Escherichia Coli, Salmonella and Coliforms. Anecdotal evidence from a farm that has used [Alliguard](#) on every cycle since using it first to address an outbreak of enterococcus, points to a wider reduction of mortality rates from 7% to 3%, which suggests that [Alliguard](#) is having a wider beneficial effect.



Proven in the lab

What is especially compelling, is laboratory research which shows that not only does Alliguard have powerful antioxidant, immunostimulatory, gut balancing and cholesterol-lowering effects, it also has proven antimicrobial properties against a range of bacteria. The table below shows a significant anti-microbial log reduction via in vitro tests.



Sample	Microbial strains	Initial Count (cfu/ml)	After 24 hours treatment (1:1 ratio)		
			Count (cfu/ml)	% Inhibited	Log reduction
0.10 ml/L	Salmonella Enteritidis (ATCC 13076)	4.5×10^5	6.5×10^2	99.86%	3
	Salmonella Typhimurium (ATCC 14028)	2.7×10^5	4.4×10^3	98.37%	2
	Escherichia coli (ATCC 25922)	2.4×10^5	2.6×10^2	99.89%	3
	Pseudomonas aeruginosa (ATCC 27853)	5.6×10^5	4.3×10^5	23.21%	0
	Staphylococcus aureus (ATCC 25923)	5.4×10^5	4.1×10^5	24.07%	0
	Aspergillus niger (ATCC 16404)	2.3×10^5	2.2×10^5	4.35%	0
0.20 ml/L	Salmonella Enteritidis (ATCC 13076)	4.5×10^5	2.0×10^1	99.99%	4
	Salmonella Typhimurium (ATCC 14028)	2.7×10^5	1.9×10^2	99.93%	3
	Escherichia coli (ATCC 25922)	2.4×10^5	1.0×10^1	99.99%	4

Alliguard is highly concentrated and is therefore only required in small quantities through the water system for the first seven days. This makes it a cost-effective way of helping a flock to combat the usual illnesses. At maximum strength dosage, Alliguard would be around half the cost of a routine course of antibiotics formerly applied. This makes a strong case for using Alliguard as an alternative approach to previous antibiotic use. Further trials are to be conducted within flocks, though we have already seen very positive outcomes through customers using Alliguard to deal with issues in their flocks.

Conclusion

Undoubtedly, there is still a place for antibiotics in poultry farming, but the days of routine dosing of entire flocks have long gone. The future of responsible and sustainable antibiotic use in farming, requires new solutions to ensure that welfare remains high and mortality rates stay low. We believe that phytogenics such as Alliguard are a key part of the solution in the fight against disease in intensive production systems, and that routine use is a wise proactive measure. Watch this space for more news on our field trials, currently being arranged for early 2023.