



## Just Say No to Drug Resistance

By Geoff Geddes, for Swine Innovation Porc

If antibiotics can treat infection by killing or slowing microbial growth, why not use more and more of them? What could possibly go wrong? By now, most people know the answer: antimicrobial resistance (AMR). It occurs when microbes such as bacteria or viruses evolve in ways that reduce or eliminate the effectiveness of antimicrobial medicines like antibiotics.

With the global community mobilizing to mitigate the risk of AMR before the situation worsens, Swine Innovation Porc held a special session at the Banff Pork Seminar that included two presentations on the AMR threat and how we can address it.

### “Antibiotic Use in Canada: How are we doing?”

As in many industries, the pork sector aims for a “less is more” approach, and the urgency to move in that direction has never been greater.

“AMR is a worldwide concern for humans and animals,” said Dr. Christian Klopfenstein, swine extension expert with the CDPQ (Centre de développement du porc du Québec).

That concern was evident in recommendations released recently by the World Health Organization (WHO). The WHO called for an overall reduction in antimicrobial use for food producing animals, as well as a complete restriction of antibiotic use in growth promotion and disease prevention.

Canada recently took a step in the right direction. As of December 1, 2018, antibiotics sold in Canada for use in livestock and poultry production required a veterinary prescription, and antibiotics can no longer be used for growth promotion.

While it’s a good start, the numbers don’t lie, so there is still room for improvement. At present, there are 84 antimicrobials registered in Canada for about 300 different uses in swine.

“Canada’s food animal sector makes considerable use of antibiotics,” said Dr. Klopfenstein. “Food animals account for 78 per cent of that use and 22 per cent is by humans. Of the 12 food producing animals in Canada today, cattle and swine are at the top for employing antibiot-



*According to Dr. Klopfenstein, Canada is taking steps to move in the right direction regarding antibiotic use. A study of 100 Canadian grow-finish units showed a 35% reduction in antibiotic use from 2016 to 2017. Photo: Public domain.*

ics. We put a lot of antibiotics in feed as it's an easy way to treat pigs. We also use large amounts of Tetracycline [a prescription antibiotic used to treat a wide range of infections], which must be used in higher doses to be effective."

At the same time, there are some encouraging figures from the Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS), an initiative of the Public Health Agency of Canada. Based on surveillance activity of 100 farms by CIPARS over the last several years, antibiotic use fell by 35 per cent in grow – finish units in the swine sector from 2016 to 2017. Last year, there was a further drop on the grow-finish side of production.

Reducing antibiotic use can be a delicate balancing act. In Europe, the philosophy is to incorporate them as little as possible, but as much as necessary for animal welfare. Canada seems to be following that example, recognizing antibiotics as a good tool from a welfare standpoint while stressing the need for prudent use. To that end, Dr. Klopfenstein had some

helpful advice.

"We need to ensure that instructions for antimicrobials are clear and that they are used properly at the farm level. Withdrawal periods prior to animals going to market must be respected, and there should be better documentation of drug options so it's clear what to choose for treatment of a certain disease."

The doctor would like to see more research on the link between antibiotic use and AMR, something he feels is not currently clear. He is also pushing for a shorter treatment period, as the common practice in Canada of putting antibiotics in feed leads to longer treatment durations compared to other options like water treatments or injectables.

If there's an overarching theme to the new rules and attitudes surrounding antibiotic use for farm animals in Canada, Dr. Klopfenstein feels it may be a shift from "safe, efficient, easy and low cost" to "safe, efficient, minimal and low cost".

Somehow, that seems fitting. Everyone agrees on the need for change, but no one said it would be easy.

### **"How are other commodities dealing with antibiotics?"**

Why did the chicken cross the road?

If you said "to get to the antibiotics", you're clearly out of touch. Led by Executive Director Karen Kirkwood, the Alberta Chicken Producers are a leader in the livestock sector when it comes to addressing antimicrobial resistance (AMR). In the process, they're setting an example that others are sure to follow.

In 2014, the Canadian chicken sector banned



*Dr Christian Klopfenstein at Swine Innovation Porc's health session in Banff in January 2019.  
Photo: Bruce Cochrane*



*Karen Kirkwood speaking at the health session.  
Photo: Bruce Cochrane*

the preventative use of category 1 antimicrobials, and did the same for category II antimicrobials effective January 1, 2019. In part, those moves are a response to growing consumer sensitivity around the AMR issue.

“The Alberta Chicken Producers commissioned a study in 2016 and a second one in 2018,” said Kirkwood. “We interviewed 1006 Albertans, and one of the most revealing results is that demands for antibiotic free chicken are on the rise.”

Adding to the need for change was that survey respondents did not distinguish between the use of hormones and antibiotics, even though hormones have been banned in the chicken industry for over 50 years. 35 per cent of participants in 2018 believed chicken contains both hormones and antibiotics, up from 33 per cent in 2016.

“That increase is happening across all age groups, though it’s most notable in the 16-29 age range; especially females. Those are the up and coming consumers, so it’s clearly a concern. Polling by the Chicken Farmers of

Canada also finds a growing perception among young people that chicken contains antibiotics.”

If you’re wondering where those views are coming from, you’re not alone. Focus groups showed media and personal communication were the main drivers of misconceptions around hormones and antibiotics. In turn, those misconceptions helped drive the development of an antimicrobial use (AMU) strategy, a joint effort of the Chicken Farmers of Canada and industry stakeholders.

The strategy is built on the foundations of reduction, surveillance, stewardship, and research and innovation. Key elements include defining AMU and analyzing AMR trends; reviewing best management practices; ensuring effective controls of AMU in Canada; educating stakeholders on the issues of AMU and AMR, and researching the availability of alternative products.

The objectives and approach of the strategy work in collaboration with the Canadian government’s Pan-Canadian Framework on Antimicrobial Resistance and Antimicrobial Use.

“Surveillance is vital to understanding existing use patterns across the country, and partnering with the federal government on that was a key source of credibility.”

Through all the polling, focus groups and strategies, the industry is working to maintain the public’s confidence while turning the focus from why the chicken crossed the road to how he did it: without the aid of hormones or preventative antibiotics important to human medicine, and with producers, consumers, government and industry squarely behind him. 