



Antibiotic resistance – is it open to misinterpretation?

The sharing of science based antibiotic use and resistance information continued among experts and leaders from the animal, human and public health communities during a recent symposium sponsored by the National Institute for Animal Agriculture and held in Kansas City, Missouri, USA.

Adding to the symposium's insightful, transparent discussions were presentations by media and consumer advocacy group representatives as well as questions generated by symposium attendees.

"Antibiotic resistance has been called the single most complex problem in public health, and this symposium, entitled 'Bridging the Gap Between Animal Health and Human Health' provided

respective health communities and disciplines a platform where they shared their latest research findings," Dr Nevil Speer, co-chair of the symposium and a professor at Western Kentucky University, told International Meat Topics.

"This year's antibiotic use and resistance symposium not only shed additional light on this often polarised topic but we identified common ground so a collective path forward that serves the best interests of all parties can be forged."

The 170-plus symposium participants from across animal, human and environmental health heard a wealth of information, including the following 11 points:

- The science behind the emergence, amplification, persistence and transfer of antibiotic resistance is highly complex and open to misinterpretation and misuse. If you think you understand antimicrobial resistance, it has not been explained properly.
- The extremely complex relationship between animal health, human health and environmental health is driven by two premises: 1) Antimicrobial resistance is a naturally occurring phenomenon that is present with or without the use of antimicrobials; and 2) Anytime an antibiotic enters the ecosystem, it contributes to the presence of antibiotic resistance.
- Antibiotic resistance is not just transferred from animals to humans; resistance is also transferred from humans to animals.
- Antibiotic resistance is not just a US challenge; it is an international issue that requires a strategic global One Health approach.
- Evaluating antimicrobial resistance involves balancing risks versus needs, while constantly recognising the importance of maintaining an efficacious arsenal of human antibiotics.
- New tools that address food animal infectious diseases must be developed, whether they are in the field of prevention or new molecules for therapeutics.
- Research studies and findings are often viewed through different lenses. Individuals can look at the same study and obtain different interpretation of the results and what the study infers based on their own biases.
- Decisions should be based on science, and policy should be based on science. The question, however, is who decides what constitutes evidence that is considered when making those decisions and policies.
- Significant efforts are being led by the public health community to reduce inappropriate antibiotic prescribing in human health and reduce hospital-acquired infections. Agriculture needs to be open to change as well.
- Change will happen. Open dialogue must continue, with animal agriculture at the table or change will be drastic and by statute and will not be a deliberative policy change.
- Solving antibiotic resistance requires collaboration and raises the question "How does human medicine, environmental health and animal medicine work together to address antibiotic use and resistance?"