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Preparing to produce pork with fewer antimicrobials

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Introduction

Antimicrobials have been used in animals and animal feed for over 50 years and have always been highly regulated by the Food and Drug Administration (FDA). Isak Dinesen said, "God made the world round so we would never be able to see too far down the road." Who could have predicted after experiencing the worst economic conditions in history of the swine industry that in less than one year prices would rebound to the levels we received over the past 9 months? Economic challenges have not been the only issue baffling the experts in the swine industry. Porcine Reproductive Respiratory Syndrome Virus and animal welfare and rights have also received endless attention over the past few years. These issues are snowballing keeping swine producers on their toes. Antibiotics used in agriculture are not exception and have been put through extreme scrutiny in the European Union since late in the last decade. The issue continues to receive more attention in the United States and is likely to receive more attention.¹ The E.U. has "flattened out the world" making the view down the road a little clearer. It is our task to fix the course for the future, so our swine producers can do what they know best...raise healthy hogs.

Unfortunately, the European Union and some of its member states have taken the precautionary route which has led them to ignore sound science in lieu of performing proper risk assessments. In spite of denying their producers tools to compete in the world market, these countries have seen virtually no improvement in human health.^{2,5}

We are now seeing public health advocates in the US calling for partial or total bans of certain classes of antibiotics in food animals. Here, as has been the case in Europe, there is a particular aversion to production uses of antimicrobials such as growth promotion and feed efficiency which are seen as providing only economic benefits and thus cannot offset the potential risk to human health. While the extensive safety measures that have been taken in the U.S. will be well documented by other presenters in this seminar, the true litmus test that the regulators must follow is: "a reasonable certainty of causing no harm (to humans)".

The political climate as it stands today makes those who are faint of heart in the swine industry adopt a defeatist

attitude and when this attitude enters the board rooms of the animal health companies who develop and bring new articles to the market, the pool of research funds dry up.

Let us, at the risk of trying to look too far down the road, see how far we have come on reducing use of antimicrobials and what alternatives are available should the industry lose classes and uses of more antibiotics currently approved for human use. I want thank my good friend and colleague, Dr. Robert Evelsizer, for his thoughtful and insightful input to these important issues.³

Progress has been made

First we must recognize the strides we have made as an industry in reducing use of antimicrobials in pork production as well as the level of veterinary oversight. There have been huge strides made in eliminating and reducing veterinary drug use that once was necessary and common in the food chain. Through adoption of health technologies such as depopulation/repopulation, all in/all out, age segregation, wean age, vaccine technology, improved hygiene, and combinations thereof have made large impacts by reducing the usage levels of antimicrobials.

In addition to these and many other new technologies, the severe downturn in profitability due to high input cost and the artificial drop in demand forced producers to look at all costs involved in producing a pound of pork. Any input that failed to pass the cost: benefit ratio test has been eliminated.

New use data based on realistic models will soon demonstrate these reductions in use. Producers and their veterinary consultants will continue to map out a course for continuous quality improvement in this area. After nearly three years of low profits and losses, the industry has no room for those producers to attempt to use antibiotics to compensate for poor management and over-crowding as is often claimed by the anti-farming activists groups such as the Pew Charitable Trust, Keep Antibiotics Working, and Center for Science in the Public Interest. These groups over-look science-based risk assessments that have been performed and disregard the benefits of antibiotics in livestock production as they embrace the precautionary principle.

Preparing to produce pork with fewer antimicrobials

Modern production embraces good animal husbandry, nutrition, biosecurity, and immunization protocols, all working together to reduce the use of antimicrobials. Following the American Association of Swine Veterinarians “Basic Guidelines of Judicious Therapeutic Use of Antimicrobials in Pork Production”⁴ has led swine practitioners to be intentional about when and where antibiotics are used. Veterinarians and swine consultants continue to question the need and purpose of antibiotics at all stages and one expect more veterinary oversight and involvement as technologies such as Global Vet Link become more prevalent and the political awareness and education drives the issue toward greater voluntary veterinary oversight.

Be open to alternatives and be prepared to educate ourselves and our producers

The Danes are offered great examples for what to do after a broad based ban of antibiotics. The began to research alternatives such as organic acids, essential oils, probiotics, zinc oxide, ration protein densities, weaning age, limit feeding and utilizing antibiotics formally thought of as growth promotant at therapeutic levels. Certainly, the Danes explored nearly every alternative and combination of those mentioned and others.

So the important lesson we need to take from this is to be respectful and attentive in exploring alternatives and realize that science sometimes “lags” in certain areas until need arises and the solution may lie just beyond the next scientific investigation.

We need to educate ourselves and our producers on alternatives to current antibiotics. Be willing to learn from the experience of our peers. Our colleagues are sometimes much more open to trying something in the realm of traditional therapies that is ‘peer tested’ than looking seriously at the experience of credible practitioners in trying ‘alternative’ therapies. This does not mean being careless or throwing the ‘scientific approach out the window’... actually quite the opposite. One of our strengths as practitioners has been ‘innovation’. We are the most qualified to make sure that innovation passes scientific muster.

Be open to a combination of alternative and traditional therapies. It does not always have to be either/or. We may find that there exist synergies between traditional and non-traditional approaches.

While sponsors of existing antibiotics have and will continue to be an important ally to producers and the veterinary profession, we cannot leave it up to them to help us reduce the use of therapeutic and or growth promotant level of antibiotics in food animal production. They will continue to be partners in ‘responsible use’...yes, but we cannot rely on them to lead the way in substantially reducing use when

it means loss of market share. In some cases, the sponsors have actually “given ground” on some of their label to avoid issues from the human side of the business.

Another important segment of our industry that deserves careful attention is what can be learned from current antibiotic-free, organic, or other niche markets. There are some producers and systems having relative success in producing pork without antibiotics and to this point they can continue due to the lucrative premiums paid by their processors. This could be a valuable resource for ‘conventional’ production faced with broad based bans of antibiotics. An example is the veterinarian, Dr. Monan St-Hilaire who spoke at the 2010 Banff conference. She had a lot of valuable insights into successful antibiotic free production and there are other veterinarians which can speak to this topic as well. These people can provide a font of information and held up for open scientific approach in this and other professional meetings.⁷

Summary

One of my favorite “Yogi-isms” is “Predictions are difficult, especially about the future.” This paper attempts to take a look at what European veterinarians and producers have attempted to offset the loss of antibiotics that we continue to use in the US. There have been many attempts to demonstrate that there was little if any affect on production as a result of the ban and therefore continue to ask the question: “If there is little or no effect on production, why would we not take the precautionary approach and stop using antibiotics in livestock for purely economic reasons?”

If the US adopts for political reasons, the precautionary principle, our industry will also have to find alternatives to tools that have been used for over 50 years. Is it logical that what has not happened in 50 years of antibiotic use in animals and man seems likely to happen overnight now?⁴ If you turn the precautionary principle around, the question may be: “Why would we take the chance of unintended consequences of banning tools that have been used successfully and safely for over 50 years?”

Alternatives exist and will be employed if needed but we must continue to ask “at what cost?”

Those are costs not only to producers but to the health and welfare of our pigs and to who’s benefit?

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