

Poultry health: New challenges for a new era



H I G H L I G H T S O F A R O U N D T A B L E D I S C U S S I O N



J U L Y 2 0 1 5 • B O S T O N



Poultry health: New challenges for a new era

W E L C O M E

Reducing or eliminating antibiotics from poultry production is appealing to some retailers and consumers, but the trend has created new health and welfare challenges for the 9 billion broiler chickens and 240 million turkeys produced in the US each year.

New disease patterns are emerging while other pathogens are becoming more prevalent and difficult to control. Poultry veterinarians are under pressure to find new, dependable solutions for disease management while adhering to their sworn oath to provide optimal care.

To help address these concerns, Zoetis Inc. recently organized a roundtable discussion — “Poultry health: New challenges for a new era.” In a lively discussion moderated by my colleague Lloyd Keck, DVM, ACPV, eight opinion leaders in the industry — including veterinarians from three major poultry companies — shared their candid insights on this new production trend.

Our distinguished panel also discussed Denmark’s experience with eliminating most medicated feed additives and, more importantly, how the industry might go about tracking and reporting antibiotic use.

We are pleased to share highlights from the roundtable. Additional copies may be obtained at poultryhealthtoday.com.



JON SCHAEFFER, DVM, PHD
Director, Poultry Veterinary Services
Zoetis Inc.
jon.schaeffer@zoetis.com



- 4 Panelists
- 6 Impact of eliminating feed antibiotics
- 11 Denmark vs. US — apples to oranges?
- 13 Reaction to McDonald's US antibiotic policy
- 15 Antibiotic alternatives: Are they dependable?
- 18 Regulatory climate: Is there any middle ground?
- 20 Keeping score on antibiotic use
- 23 Educating the food chain



Poultry health: New challenges for a new era

PANELISTS



“...market research has shown that with education, consumers develop a better understanding of antibiotic use and, in turn, become more accepting of it...”

Moderator
LLOYD KECK, DVM, ACPV
Zoetis

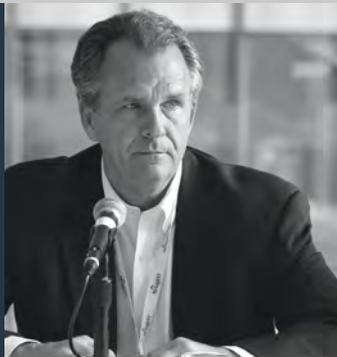
“...without antibiotics, I think we are going to find other things involving gut health that we aren't aware of yet.”

CHARLES HOFACRE, DVM, PHD
University of Georgia



“The producer is faced with the choice of treating the flock and losing its antibiotic-free status or allowing the disease to run its course.”

DAVID RIVES, DVM
Zoetis (formerly with Prestage Farms)



PRACTITIONER 1



PRACTITIONER 2



PRACTITIONER 3



“ When producers select non-antibiotic replacement products, they’re going to find there’s a fine line between what works and what doesn’t. ”

STEVE DAVIS, DVM
Colorado Quality Research



“ Oddly enough, we still see resistance to antibiotics that we’ve not been allowed to use for a long time. ”

ASHLEY PETERSON, PHD
National Chicken Council



“ ...when you suppress the surrounding organisms in other phases of poultry production, *Salmonella* can flourish. ”

DENNIS WAGES, DVM, ACPV
North Carolina State University



Three production veterinarians from major US poultry companies participated in the roundtable with the understanding that their names and affiliations would not be published. This agreement allowed them to be more candid with their insights, opinions and experiences. They are identified here as PRACTITIONER 1, PRACTITIONER 2 and PRACTITIONER 3.



Impact of eliminating feed antibiotics



KECK

Raising broilers without antibiotics now accounts for an estimated 15% to 20% of production in the US and we expect that figure to rise. Let's start with the hatchery. What's been the impact so far of eliminating antibiotics from this stage of production?

PRACTITIONER 1

We started raising drug-free broilers over 15 years ago and have been totally antibiotic free for about 5 years. We use some chemical anticoccidials, but that's it.

My best estimate is that our 7-day mortality due to withdrawal of antibiotics in the hatchery went up 0.5% on average. Prior to that, mortality was probably about average for the industry — less than 1% in the summer and a little over that in winter — probably 0.9% to 1% year-round. And I think we were able to reel most of that back with, frankly, just attention to detail and sanitation. Formaldehyde [as a disinfectant] was a part of it.

PRACTITIONER 2

We're just now dipping our little toe into the antibiotic-free market and we have ongoing trials. We've seen about a 0.5% increase in 7-day mortality. We run about 1% mortality with antibiotics in the hatchery, and about 1.4% without them.

PRACTITIONER 3

We still use all the tools that are available to us but are also working into the "no antibiotics ever" market. We're about 8 weeks into the program. By next year, one-third of our production will be raised without antibiotics.

In our no-antibiotic programs, we're 0.3% higher on 7-day mortality on average. Of course, that was summer, which is normally the best time of the year for 7-day mortality. We'll see how it goes this winter.

KECK

What's the cause of increased 7-day mortality? Is it due to bacterial infections, like *Escherichia coli*?

PRACTITIONER 3

Yes, I think so.

PRACTITIONER 1

I think that would be the obvious conclusion, but I don't know that it's necessarily *E. coli*. I have no data to support this, but I would hypothesize that eliminating the use of antibiotics in the hatchery might have longer-term consequences and be associated with problems such as bacterial chondronecrosis with osteomyelitis, septicemia, vertebral osteoarthritis and infectious process.



HOFACRE

I agree. Some of these bugs that colonize may just wait for the bird to grow and get to the right weight and size; then you end up with problems like bacterial osteomyelitis.

KECK

Now what about *Salmonella*? Is that more common in operations where we've discontinued hatchery antibiotics?

HOFACRE

I started out at Cuddy Farms, which sold day-old turkey poults. So, I would say that, yes — for some of the *Salmonellas*, such as *S. arizonae* — you could see a higher incidence in birds where the hatchery antibiotic was eliminated, but I don't know if you could say that about broilers.

If you look at broiler mortality from *Salmonella* versus *Salmonella* as a food-safety issue, probably not. But if you look at mortality in broilers with *S. arizonae* or some of the typhimuriums with turkey poults then, yes, you'll definitely have birds live better when a hatchery antibiotic is used. But when it comes to food safety, I don't think eliminating the hatchery antibiotic has an impact.

WAGES

The majority of *Salmonellas* that we see at the veterinary college in North Carolina are gentamicin-resistant, which is the predominant antibiotic used in hatcheries. So, I don't think *Salmonella* is more of a problem on farms where hatchery antibiotics are no longer used.

However, when you suppress the surrounding organisms in other phases of poultry production, *Salmonella* can flourish. We've seen that in starter programs in turkeys, for example, when you've used a broad-spectrum antimicrobial like RofenAid (sulfadimethoxine and ormetoprim) going into starters, problems have occurred. The *Salmonella* seems to become more virulent — *S. arizonae*, particularly — and will become clinical. So, I think there's a kind of corollary effect with some broad-spectrum antibiotics, but it's not a cause and effect from the gentamicin use.

RIVES

When I was working for a turkey producer, we were still using antibiotics in the hatchery. Early mortality issues tended to be related to specific breeder flocks and breeder farms and, specifically, to egg handling and sanitation on farms and during transport. These problems weren't necessarily related to the administration of the antibiotics in the hatchery. In the culture work that we've done over the last several years, there's a really low incidence

“...our 7-day mortality due to withdrawal of antibiotics in the hatchery went up 0.5% on average.”

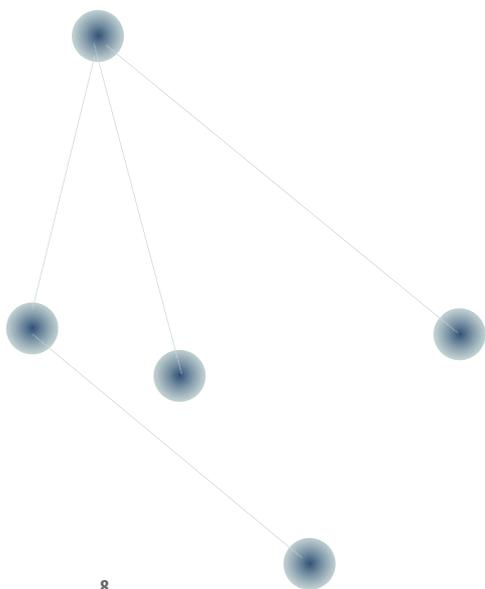
PRACTITIONER 1



Impact of eliminating feed antibiotics

“ Antibiotic-free production doubles mortality. It’s killing 100% more chickens. ”

PRACTITIONER 2



of *Salmonella*, but we picked up a lot of *E. coli* in operations that had discontinued the hatchery antibiotic.

KECK

Let’s move on to growout. What’s been the impact of antibiotic-free programs during this phase of production?

PRACTITIONER 1

The biggest impact has been on gut health. The obvious initial impact is reduced growth rate and feed conversion, but it can go beyond that. Litter condition may suffer, which can affect footpad quality and respiratory health. That becomes an economic and animal-welfare issue.

PRACTITIONER 2

If you look at 2014 data, antibiotic-free production averaged 10% total mortality, while the average conventional company had 5% total mortality. Antibiotic-free production doubles mortality. It’s killing 100% more chickens.

Consider that one poultry house has 25,000 chickens. That’s equivalent to a small city. One broiler complex produces over a million broilers per week. That’s the population of a large city. We produce some 9 billion broilers a year in the US, which is more than the world population of humans, which is about 7.3 billion. So to think that no person is going to get sick in

a small city, a large city or even the world — it’s just not realistic. Chickens are no different. They need access to antibiotics, too. There must be some middle ground here.

RIVES

Antibiotic-free turkeys are at even greater risk than their broiler counterparts, simply because they are in the field longer. Even on the best-managed farms, it’s very difficult to grow a flock of toms for 20 weeks without facing some disease challenge. Mortality can easily reach twice that of conventionally raised turkeys. The producer is faced with the choice of treating the flock and losing its antibiotic-free status or allowing the disease to run its course. This is one of the reasons antibiotic-free turkey production probably accounts for less than 5% of overall production.

KECK

Have you observed any other consequences of antibiotic-free broiler production?

PRACTITIONER 1

When you adopt a program that eliminates antibiotics including ionophores, which are classified by FDA as antibiotics, it provides a huge disincentive to treat sick flocks. Most consumers think sick birds should be treated, yet many of them don’t want to eat meat from antibiotic-treated chickens.



In an antibiotic-free organization like mine, I'm under tremendous pressure not to treat. So, there's the first direct and obvious impact on live production. We're in the midst of a *Mycoplasma synoviae* outbreak and I can't treat the birds with tylosin. And believe me, it's having major consequences. So, that's quite obvious and clear how eliminating antibiotics has an effect on live production.

DAVIS

Based on our research, we find that flocks given ionophores to prevent coccidiosis also have a lower incidence of necrotic enteritis — often lower than birds that receive an antibiotic that's indicated for necrotic enteritis but without the ionophore. That's because the more you can prevent coccidiosis, the less pressure you'll have from enteritis. Ionophores have greater efficacy against *Clostridium perfringens*, as well.

So far today, no one's talked about higher condemnations for antibiotic-free flocks, but it's been my experience that there are more sick chickens getting to processing age that did not receive antibiotics compared to those that received ionophores. Any time you have sicker flocks going into the plant, there's a greater chance that sick birds will end up in the food chain due to human error.

PRACTITIONER 1

The loss of the ionophores [in antibiotic-free operations] means that managing

coccidiosis is more difficult. When you go 100% antibiotic free across the board, it also becomes very difficult to use a coccidiosis vaccine effectively. In fact, I've found it exceedingly difficult. So, you suffer the consequences, which are coccidiosis and secondary infections like necrotic enteritis. Or, as I mentioned earlier, you start relying very heavily on chemical coccidiostats.

And I think that's a very illustrative point right there: Chemically synthesized coccidiostats are FDA-approved drugs that are not antibiotics and that have no human applications. However, when the people who don't want antibiotics discover that you're using "chemicals" to control coccidiosis in place of ionophore antibiotics, that's going to be more scary to them than the word "antibiotic." And if the chemical coccidiostats someday go away, it's going to be very difficult to maintain the health and welfare of antibiotic-free flocks.

PRACTITIONER 3

It seems that if you can scale back dramatically on bird density, there's less necrotic enteritis. But the consequence is increased costs, which are passed on to the customer.

DAVIS

If the trend continues, we're going to have to concrete all the floors in our chicken houses. We're also going to have to go heavily with formaldehyde. In

“...the consequence is increased costs, which are passed on to the customer.”

PRACTITIONER 3



Impact of eliminating feed antibiotics

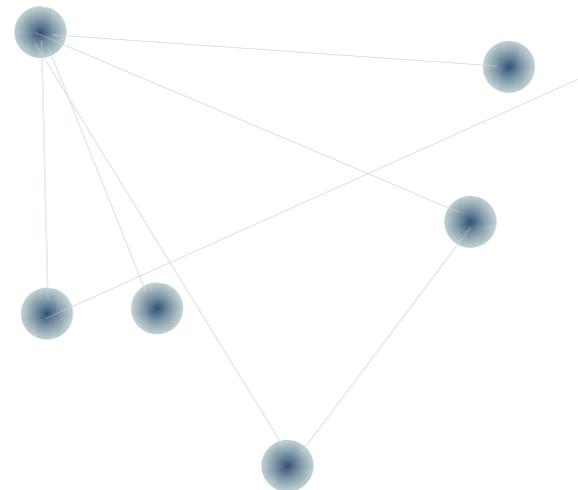
“ Any time you have sicker flocks going into the plant, there’s a greater chance that sick birds will end up in the food chain...” ”

STEVE DAVIS, DVM

addition, we’re going to have to better control the humidity of our chicken houses. We’re not going to be able to use cool-cell pads; we’re going to have to go to air conditioning, because you’re going to have to have a dry environment in those chicken houses if there’s any chance of remaining sustainable without in-feed ionophores or antibiotics in the water.

Let’s not forget the conflict of interest this anti-antibiotic trend causes. As a veterinarian who took an oath swearing to benefit society through the protection of animal health and welfare, I can’t say it feels good — and I don’t feel good — about the direction we’re heading as an industry. [Removing antibiotics from poultry production] is not good for chickens or for consumers, either, but consumers don’t understand that.

I can honestly say that as a grandfather, I would much rather see my grandson eating chicken that received antibiotics or ionophores and came from a healthy flock with a lower condemnation rate. Food vendors like Chipotle promoting antibiotic-free chicken don’t want to hear about the perils of antibiotic-free production and the fine line we’re walking. What’s truly best for food marketing campaigns is not what’s best for our patients — the chickens — if their mortality is doubled. If we were talking about puppies, it wouldn’t be an issue.





Denmark vs. US — apples to oranges?



KECK

What about the Danish model? Is there anything to learn from Denmark's experience, where in-feed antibiotics for growth promotion were banned more than 20 years ago?

WAGES

Comparing the experience there to the US is like comparing apples to oranges. The Europeans have ionophores, which aren't classified as antibiotics there, and numerous antibiotics they can use for treatment in water that we don't have access to in the US. Some of the antibiotics used in Denmark are banned for use in food animals in the US. They have access to multiple fluoroquinolones and other antibiotics that we cannot use in poultry. It's not fair to compare the Danish model to the US.

HOFACRE

Under the Danish model, antibiotics for growth promotion and disease prevention are not permitted. However, producers are allowed to use a lot more therapeutics. Now they've instituted a program where they're trying to control the amount of therapeutic antibiotics used, because they recognize that as producers stopped using antibiotics for growth and disease prevention, therapeutic usage shot up. The total usage of antibiotics probably has not changed.

“...they recognize that as producers stopped using antibiotics for growth and disease prevention, therapeutic usage shot up.”

CHARLES HOFACRE, DVM, PHD



Denmark vs. US — apples to oranges?

“ The trend line for antibiotic resistance in Denmark and in Europe overall has not changed. ”

DENNIS WAGES, DVM, ACPV

The one exception is they can still use ionophores, because they're classified as anticoccidials — not antibiotics. That's the big difference. For us in the US, the really hard part is controlling coccidiosis. Coccidiosis vaccines work better if you can administer them by eye drop and make sure every bird gets a full dose. But as things are now, we don't have good coccidiosis control in antibiotic-free production, and so *Clostridium* has the opportunity to flourish.

DAVIS

The only market I know of that's having any success right now raising chickens without ionophores is Canada — and that's a completely different beast. Canada is not competitive in the world market for poultry meat, nor is it living on exported chicken.

To be profitable and sustainable over the long term, the US poultry industry has to remain very much dependent upon exportation of our product.

KECK

Under the Danish model, has there been any evidence that there are fewer antibiotic-resistant infections in people?

WAGES

There have not been fewer antibiotic-resistant infections. The trend line for antibiotic resistance in Denmark and in Europe overall has not changed.

KECK

What about food-safety issues such as *Salmonella* under the Danish model?

PETERSON

In Europe, they destroy infected flocks.

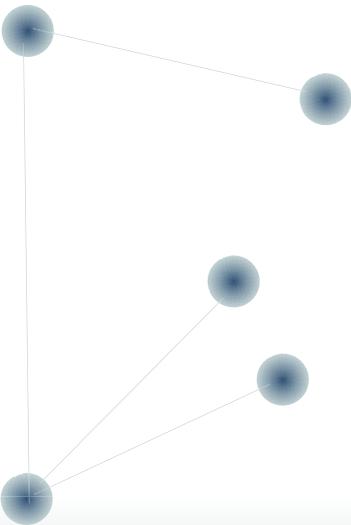
HOFACRE

Yes, if they find *Salmonella*, they depopulate. Their industry is tiny and they import. I was in Denmark recently and a veterinarian told me no one contracts foodborne *Salmonella* from food produced in Denmark. I took that to mean they are importing chicken and if someone gets sick, they've eaten chicken that came from somewhere else. So their model works, but on a very small scale.

By living without antibiotics, I think we are going to find other things involving gut health that we aren't aware of yet.



Reaction to McDonald's US antibiotic policy



KECK

What's your reaction to the recent policy announcement by McDonald's USA, which will permit ionophore use but not antibiotics considered by FDA to be unimportant to human medicine, such as bacitracin? Did McDonald's find a good middle ground?

PRACTITIONER 2

McDonald's had a chance to get it right but didn't. It will allow ionophores but not allow treatment, control or prevention with other antibiotics approved by FDA. So, if you treat sick chickens, McDonald's is not going to buy them. That's its US policy. Its global policy allows for treating sick animals.

HOFACRE

Yes, in Europe animals are safe under the McDonald's policy. You can treat them, but in the US, it's "all or nothing" with the exception of ionophores. I just don't see how we can have 100% more mortality with antibiotic-free production systems and say that it's right to withhold antibiotics from sick birds, but I also don't see the regulatory climate changing and allowing us to return to the use of ionophores for antibiotic-free production. We need to figure out how to get past what's being thrown at us.



McDonald's...

will allow ionophores but not allow treatment, control or prevention with other antibiotics approved by FDA.



PRACTITIONER 2



“ The challenge now for the US poultry industry will be to effectively control gut populations in other ways... ”

DENNIS WAGES, DVM, ACPV

PRACTITIONER 3

Honestly, when McDonald’s made that announcement, I was relieved because the policy isn’t as stringent as it is with some food vendors we do business with that want chicken raised without any antibiotics. So, when the McDonald’s policy came out, I figured it was one step in the right direction, although I agree they didn’t get it right. There are some other animal-specific antibiotics that should have been included in their guidelines, and there should have been a treatment allowance for sick animals.

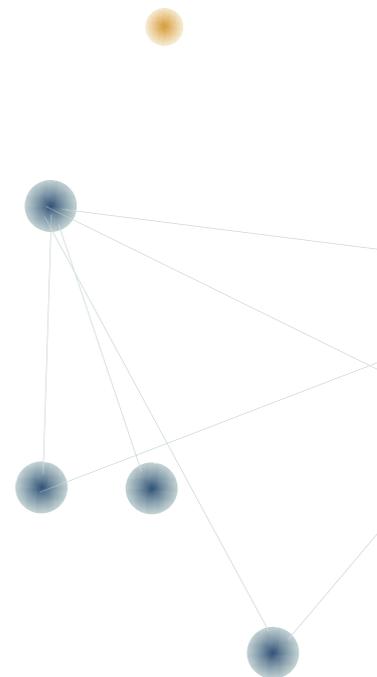
WAGES

Look, ionophores are antibiotics — that’s how they’re classified, that’s how they’re defined. Period. You look any place that teaches about antibiotics, and that’s how they’re classified. Still, I’m glad McDonald’s recognizes that using them in animals does not present any risk to humans. That was a big win for poultry.

Some of the antibiotics that McDonald’s is not allowing [under WHO guidelines] — bacitracin and virginiamycin, for example — have Gram-positive activity. Do they have any significant use in human medicine? None. But they are antibiotics, so people say, “You’ve got to get rid of them” — even though they’re needed in poultry and livestock to control clostridia.

I think it’s a shame that these other antibiotics can’t be used in chickens going to McDonald’s. Bacitracin isn’t medically important in humans [according to FDA]. Even virginiamycin — there are no streptogramins that are currently used in humans — the one that was approved, was removed from the market.

So, there are antibiotics out there that should not be classified as important to humans. The challenge now for the US poultry industry will be to effectively control gut populations in other ways, either through immunomodulation or with some of the natural products or vaccines.





Antibiotic alternatives: Are they dependable?



KECK

What about alternatives to antibiotics? Has anyone had any success controlling coccidiosis or necrotic enteritis with non-antibiotic products?

DAVIS

We're doing a lot of work in that area. When it comes to these natural or non-antibiotic products, it seems like everyone is looking for the silver bullet that is going to take the poultry market by storm.

We're finding that two products can look identical on paper, yet one can be very efficacious in our necrotic enteritis model, and the other one is not only ineffective but makes necrotic enteritis worse in terms of lesion scores and/or mortality. We're probably dealing with issues of consistency. Are the products that make necrotic enteritis worse having a negative impact on gut microflora? Or are they causing gut irritation? Is it a carrier situation?

When producers select non-antibiotic replacement products, they're going to find there's a fine line between what works and what doesn't. It might vary from batch to batch and you might see good results or you might make the situation worse. This is something we've found quite surprising in our research.



When it comes to these natural or non-antibiotic products, it seems like everyone is looking for the silver bullet...



STEVE DAVIS, DVM



**Antibiotic alternatives:
Are they dependable?**

“ We’ve got to continue looking for the right combination of probiotics, prebiotics and other alternatives to maintain optimal microflora... ”

DAVID RIVES, DVM

PRACTITIONER 1

Alternative products have come out of the woodwork — it’s the Wild West. We’ve got organic acids, probiotics, pathogen-associated molecular-pattern products, botanicals and the list goes on. None are up for FDA approval. The companies selling them all have pen-trial data, but field testing these products is a real conundrum. Based on the few thorough trials I’ve been able to do, I’ve not found one of these products yet that I’m using in antibiotic-free production.

PRACTITIONER 3

We’ve tried several of these products and still had a lot of necrotic enteritis in our birds raised without antibiotics.

RIVES

Efforts are being made to substitute some of these same products for antibiotics in turkey production. Direct-fed microbials, yeast cell-wall products and saponins have shown promise in young turkeys. Effective prevention and control of protozoa other than coccidia may be the biggest challenge.

WAGES

The challenge will be to effectively control gut populations in other ways. As I mentioned, we need to look at immunomodulation compounds, some of the natural products and vaccines.

PRACTITIONER 2

I agree. We will need to rely more on vaccines for animal health, provided there’s an effective vaccine for the problem. The application of vaccines is becoming critical, and we’ve got to do a better job applying them. We’ve got to do a better job managing coccidiosis vaccines in chickens, for example.

There’s also a big gap in the biological control of *Clostridium*. If we could get that, then we could get closer to normal production numbers, say, on mortality in antibiotic-free production. We still might lose 20% more or even 50% more antibiotic-free chickens to *Clostridium*, but not twice as many.

Dr. Hofacre, you’ve worked on this problem for most of your career.

HOFACRE

I was just in Copenhagen at a necrotic enteritis meeting about current *Clostridium* and Net-B (a toxin associated with necrotic enteritis). The science is going to come a lot faster now that there’s better understanding.

RIVES

Gut health is critical for turkeys, just as it is in broilers. There are other substances that can mimic what performance antibiotics did for us. We’ve got to continue looking for the right combination of probiotics, prebiotics and other alternatives to



maintain optimal microflora in the gut at each stage of growth. This is especially critical for turkeys in the brooder house.

HOFACRE

No matter what's thrown at it, the poultry industry always seems to find a way to solve these problems. There are lots of alternatives to antibiotics that we may find don't work as well as antibiotics, but they might prevent antibiotic-free birds from suffering and having 100% greater mortality.

KECK

Should there be standards and regulations for alternative products, which currently don't have to be approved by FDA?

PRACTITIONER 2

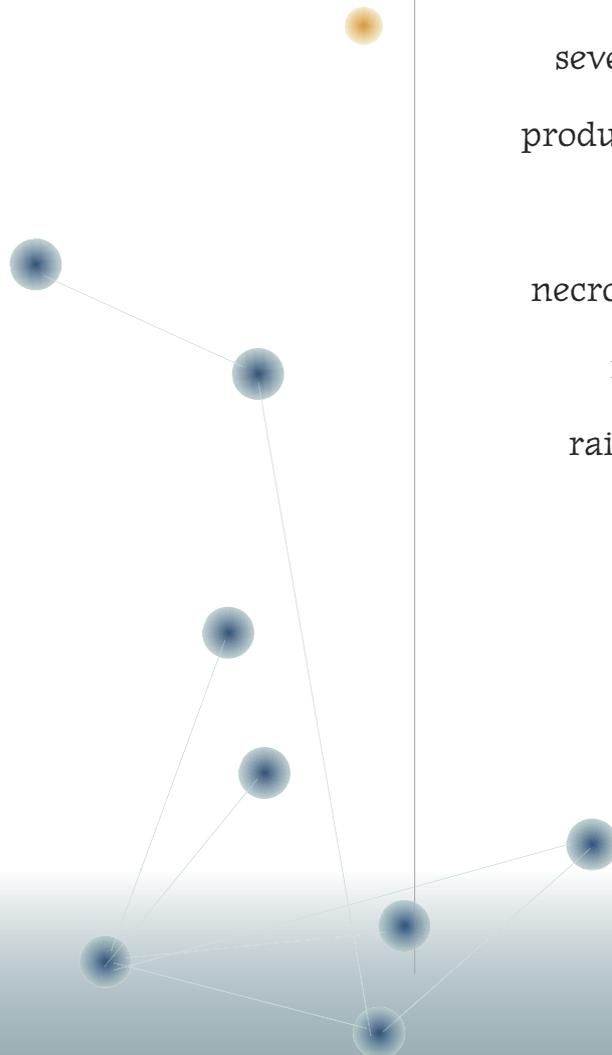
In Europe, there is a standard for non-antibiotic additives. You have to demonstrate improved production efficiency in a healthy animal. If you feed an organic acid, for instance, it has to be approved by the European Food Safety Authority. It costs a couple million dollars worth of research to get one of these products approved. Something similar in the US would help us weed out inferior products.

HOFACRE

I agree; it might be good to have a vehicle for approving the alternative products that currently don't have to go through FDA. But on the other hand, the regulatory process is slow and cumbersome. If someone comes to the US with a good alternative product and we put in a big hurdle for approval, we could be waiting years for it to become available.

“ We've tried several of these products and still had a lot of necrotic enteritis in our birds raised without antibiotics.”

PRACTITIONER 3



Regulatory climate: Is there any middle ground?



KECK

What challenges do we face on the regulatory front regarding the use of antibiotics in poultry?

WAGES

As for changing rules that affect antibiotics that are important to human medicine, forget about it — that horse has left the barn. But maybe FDA would listen to the argument that ionophores have no relevance to human medicine and probably shouldn't be classified as "antibiotics" in the US.

KECK

Dr. Peterson, what's your view? Is there any hope ionophores might be reclassified in the future as anticoccidials instead of antibiotics, which is the way it's done in Europe?

PETERSON

I see an opportunity to have some discussions with FDA. I don't know if the agency will be receptive, but it would help if we could get some consumer groups to join us.

FDA has been convinced that antibiotic use in food animals is "rampant" — that there's a "definite link between human resistance and antibiotic use in livestock production" and that antibiotic use in food animals has to be limited and restricted.

It would be the Holy Grail for the poultry industry if we could have ionophores reclassified, but today one of our biggest challenges is on meat labeling. As it is now, you either "do or you don't" use antibiotics — and there's not a lot of gray area because consumers may not understand the importance of ionophores in poultry production and how they do not lead to resistance.

PRACTITIONER 2

There's got to be a middle ground. This all-or-nothing approach [to antibiotic management] is not sustainable, and the data say it's pretty onerous for the chickens. It's double mortality.

I think that middle ground may be if the USDA Food Safety and Inspection Service gives us a "judicious use" label — one we put on the package if we follow specific guidelines for antibiotic management.

We've got to get the Chipotles and similar food retailers who are beating their chests about not allowing antibiotics to be used in animal production to understand that they're going to be buying sick chickens unless they allow the targeted use of so-called shared-class drugs to keep chickens reasonably healthy. That's the humane and sustainable plan they should be promoting.



PETERSON

Or you're going to have to source chicken from the EU, where they still use Baytril. [Baytril is enrofloxacin, which is a fluoroquinolone antibiotic considered by FDA to be highly important to human medicine. Its use in US poultry was banned by FDA in 2005.]

PRACTITIONER 2

You know, the FDA is not taking antibiotics away from us. We're taking them away from ourselves by appeasing a few customers. If you read the newspapers, you would think all chickens now don't get antibiotics. But right now only about 15% to 20% are being raised without antibiotics.

HOFACRE

I agree; the US poultry industry has shot itself in the foot. We've done it to ourselves. We've led the public to believe through marketing that if we can raise 20% of chickens without antibiotics, we can do it with 100%.

If the industry continues in this direction, it's going to steamroll so that even companies that don't want to will be forced to raise chickens without antibiotics — either because customers won't want to buy poultry raised with antibiotics or they want it for a discounted price. It's going to be customer-driven. This isn't going to change, whether ionophores are classified as an antibiotic or not.

FDA isn't going to change. We need to get the USDA Agricultural Marketing Service (AMS) to make ionophores acceptable for an antibiotic-free label. It's AMS that says we can't market chickens as raised without antibiotics if we've used ionophores.

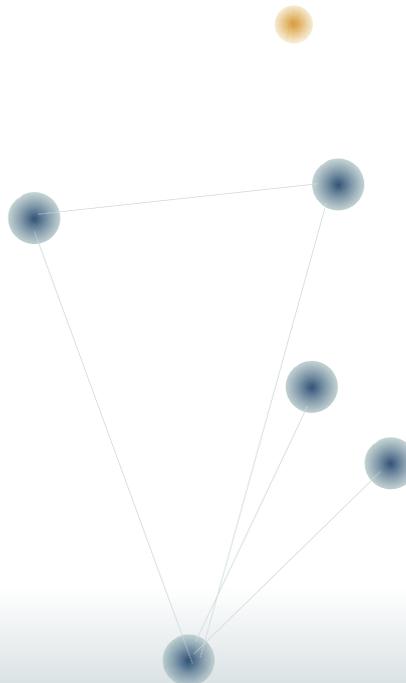
It would help if more of us sat down and worked with regulators to change the way ionophores are classified. That would make it a lot easier to manage coccidiosis.

DAVIS

I agree in that one of our key goals needs to be getting together and educating regulatory agencies and customers about ionophores. It would give us a fighting chance in this world market.

It would be the Holy Grail for the poultry industry if we could have ionophores reclassified...

ASHLEY PETERSON, PHD





Keeping score on antibiotic use



KECK

If you had the opportunity to build your own scorecard on antibiotic use and communicate it from a poultry industry perspective, taking into account FDA guidance documents such as 209 and 213, what would it look like?

PETERSON

We'd have to consider our goals as an industry. Is it to reduce the amount of antibiotics? Reduce resistance profiles?

Those are the questions we have to answer, and they are some of the questions we've presented to FDA regarding reporting requirements. If the industry is going to turn over antibiotic-use data, for instance, what does FDA want to get out of it? Currently, FDA doesn't have an answer for us.

HOFACRE

The ideal would be for us to be able to say, "This is how much of each antibiotic we use" or "We used X amount of this drug for this disease." If there was an easy way to capture this information, we'd have done it.

The US Poultry and Egg Association has asked Dr. Randy Singer of the University of Minnesota and me to look at that and has provided funding for us to put together a

survey that will give an estimate of antibiotic use in the industry. The goal would be to measure the change in antibiotic use over time.

The question isn't the amount of usage today or this year or next year; it's finding out if things have changed. Then the goal would be to tie that to antimicrobial resistance in humans. If use goes down and resistance stays the same, then it wasn't our use that was driving resistance in humans; it's something else.

PRACTITIONER 1

Attributing antibiotic resistance in humans to animal produce is pretty complex and difficult. There are a lot of people convinced it's there, but actually showing it and measuring that connection is a hard thing to do.

If you want to measure the impact of our efforts to use antibiotics more judiciously, maybe we ought to be looking at resistance patterns of pathogens on raw animal products.

PETERSON

The National Antimicrobial Resistance Monitoring System team looks at resistance in retail meats. Their findings are published every year. Oddly enough, we still see resistance to antibiotics that we've not been allowed to use for a long time.



HOFACRE

FDA wants to understand why fluoroquinolone resistance to *Campylobacter* in people isn't changing. In some years it actually goes up even though fluoroquinolones haven't been used in poultry for years. So, without antibiotic-usage data, the consumers [activists] say, "Aw, well, they must be still using fluoroquinolones on the side."

That's why it's important for us to generate that data if for no other reason than to say, "Here's truly what we're using." We could show that most antibiotic usage in poultry is with ionophores, which are not medically important to human medicine.

We have to account for that and it has to be done over time. It can't be a snapshot. The data should not be released annually. It should be released, say, every 3 years. Then it would show trends.

Without data, we don't have a leg to stand on.

PETERSON

You also have to account for flock health and welfare — not just say how much antibiotic was used. You've got to know what type of poultry, whether ionophores or other drugs were used, what you were treating for and account for the health and welfare of your birds.

RIVES

Once the requirement for more veterinary feed directives (VFD) takes hold, will that data be available and used for tracking trends?

PRACTITIONER 1

That was something the food-animal industries have fought against. The last thing we want is for veterinarians to become accountants. If food-animal veterinarians have to keep track of every prescription they write and the amount of drugs going out under their scripts, that's what will happen.

KECK

I'm not suggesting we go this route, but is the only transparent way to collect data by requiring veterinarians to report their prescriptions?

HOFACRE

Then you're going to end up becoming recordkeepers.

RIVES

Aren't you going to keep those records anyway [under the new VFD guidelines]?

“ The question isn't the amount of [antibiotic] usage today or this year or next year; it's finding out if things have changed. ”

CHARLES HOFACRE, DVM, PHD



Keeping score on antibiotic use

“ To try and give a snapshot view of what reduced antibiotic use in animals does for resistant infections in humans is going to be extremely difficult. ”

DENNIS WAGES, DVM, ACPV

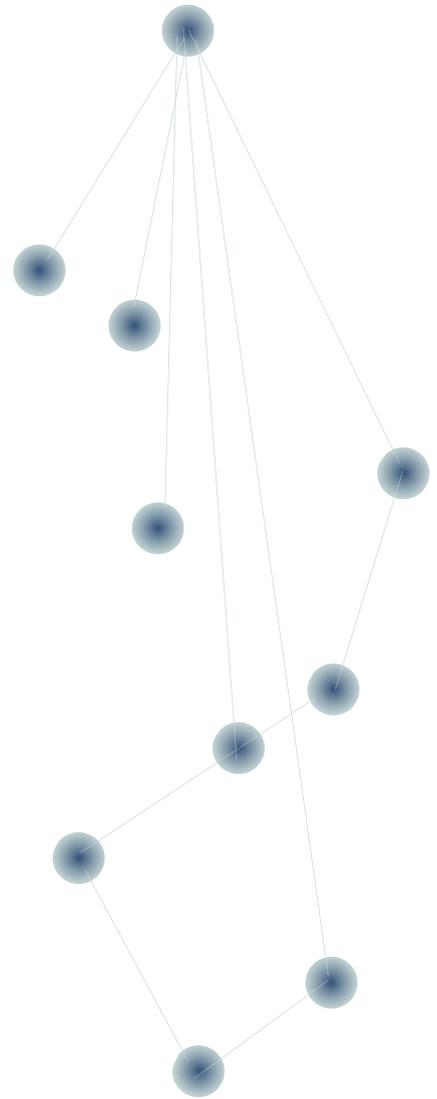
HOFACRE

Only for 2 years. But you're not going to keep records on the exact volumes of usage of each individual drug.

WAGES

Let's not forget that the only documented cases where the reduction of antibiotics has reduced resistance have been in hospital settings involving nosocomial pathogens where cessation of an antibiotic had an effect on resistance of a known pathogen. [Nosocomial pathogens are infections originating in a hospital.] In a geographic city or globally, this hasn't been possible. I don't believe that it can happen with antibiotic use in food animals either.

Dr. Hofacre is right. We've got to look at antibiotic use over time. To try and give a snapshot view of what reduced antibiotic use in animals does for resistant infections in humans is going to be extremely difficult. All other countries that have tried it have failed.





Educating the food chain



KECK

Zoetis' own market research has shown that with education, consumers develop a better understanding of antibiotics and, in turn, become more accepting of it, especially when they learn that veterinarians are involved. With that said, is it possible to educate consumers on a broad scale about the health and welfare problems created by antibiotic-free production?

HOFACRE

We're not going to convert a certain small segment of US consumers. We need to just forget about them. That said, I agree that the vast majority of US consumers don't understand the role of antibiotics in poultry production and that education would be helpful.

Only a very small percentage of consumers know what animal agriculture is or where their food comes from. We need to address some of these issues that we're not comfortable with and explain how their chicken or turkey is produced. So far, I don't think we've done a very good job of describing how we raise the chicken and turkeys they eat.



...I don't think

we've done a

very good job of

describing how

we raise

the chicken and

turkeys they eat.



CHARLES HOFACRE, DVM, PHD



Educating the food chain

“ I doubt that the average McDonald’s customer is thinking about antibiotics when they go in to buy food. ”

PRACTITIONER 2

PRACTITIONER 3

Instead of trying to educate consumers, we’ve been bringing our customers, who are large food vendors — the ones who make the decisions about the type of chicken their companies buy — to our farms. We let them go through our facilities, including our hatcheries and farms.

I have a window of opportunity when I give a presentation on antibiotic usage. I tell them that “I’m a veterinarian and I have a family.” I always show a picture of my family and say, “You know, I feed my two small children conventional chicken.” And then I talk about the oath — the veterinary oath — and it seems to resonate.

Recently, after McDonald’s made its announcement, we met with another food-vendor customer. They told us they had to make a statement in reaction to McDonald’s announcement. That’s been several months ago and they haven’t made an announcement, so we’re hoping this is an indication that we made an impact.

HOFACRE

If you ask the average consumer, “Is it okay to just let animals get sick and die?” they’re going to say “No.”

PRACTITIONER 2

Well, you know, 95% of people are food buyers. They buy based on taste, price and safety, and then 4% are choice buyers. If you go to Whole Foods to buy chicken raised a certain way, then you’re a choice buyer. Then 1% of buyers are on the fringe. They’re vegans, don’t eat animals and don’t want animal agriculture. But they’ve got all the money to publicize their views and are driving the production practices for the 95% who just want the affordable, safe products that we’ve been giving them all along.

I doubt that the average McDonald’s customer is thinking about antibiotics when they go in to buy food. But McDonald’s sales are down, they’ve got a new CEO, they’re trying to make a difference and wanted to make a splash. We’re getting whipsawed in that marketing game.

I do think there’s a window for education. We’ve met with some of our major foodservice customers also.

There could be two classes of chicken that develop. It’s going to be regular chicken, and then there’s going to be the antibiotic-free chicken. And that’s going to be it. But I think McDonald’s had it right back in the old days, when they first made McNuggets: Chicken was chicken.



KECK

Let's end with a note about what this is really all about. We work in the *food* business, not just the poultry business. Consider that one American farmer — whether it's a fruit, grain, vegetable or meat farmer — feeds about 155 people. One poultry farmer feeds about 50,000 people. It's no small task and your contributions should be recognized and appreciated.

