

# Sustainable poultry production driving industry advances

Poultry producers, already leading in some areas of environmental sustainability, will face growing pressure to minimize their impact as demand for meat and eggs intensifies.

BY MARK CLEMENTS

Pressure on the poultry industry to be more environmentally sustainable can only grow as concerns for the environment and demands for transparency increase.

As broiler and egg producers face growing demand for animal protein, how the industry responds will vary, as definitions of sustainability vary from country to country and company to company.

There is no universal definition of sustainability and, even where there is consensus, definitions have evolved since first emerging in the 1960s.

Sustainable production in its broadest sense interlinks three dimensions — environmental, social and economic, and companies and policymakers have placed varying emphases on each of these strands.

Yet where environmental sustainability is concerned, there is now general recognition that the earth's resources are limited,

Larger, modern and more technologically advanced farms are often more environmentally sustainable than more traditional methods, despite public perceptions.

Source: Hydor Ltd.

On farm or off, poultry producers may need to become energy producers. Once complete, this Northern Ireland anaerobic digestion plant will generate 3MW of electricity from up to 40,000 tonnes of litter annually, and will help to resolve local nutrient run-off issues, says developer Stream BioEnergy.

Courtesy Stream BioEnergy

Watt Poutry USA

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and that the environment underpins economic and societal development.

Within the poultry industry, many companies have already made significant progress in reducing environmental footprints and greening their businesses. However, as demand for animal protein increases, reducing or stabilizing environmental impacts will become more important but harder to achieve, meaning that even businesses with advanced sustainability policies will need to constantly review them.

#### Sustainable birds

Poultry genetics businesses have made significant progress in developing birds that make better use of the resources expended on them.

The modern broiler or layer is a very different bird from that of only a few decades ago, with better livability, improved growth and feed conversion rates, and higher yields, be it for meat or eggs. Put simply, genetics companies have been developing, although not solely focusing on, birds producing more with less, making them perhaps ideal examples of sustainability.

## However, the future may not be quite so straightforward

Newer considerations have been influencing bird development, including welfare, a growing preference for slower-growing broilers, and cage-free environments for layers. This could be viewed as less than optimal from an environmental sustainability point of view, given additional resource requirements.

Yet, selection programs have taken these demands into consideration, and birds able to respond to newer rearing practices have emerged. For producers, however, these demands for more space, or for keeping birds longer, may drag on environmental sustainability efforts.

A broader approach in genetic selection can be expected to continue, but there may be other limiting factors in making birds more sustainable — the physiological limits of birds themselves.

#### Nutrition and feed

Continued progress will also occur in nutrition, both

from the perspective of bird genetics and from a deeper understanding of nutrition itself.

As technology develops, it may be possible to include ingredients in diets that, to date, have not proved feasible or economical, and that can be locally sourced. Technological developments should allow nutrition to be better aligned over the entire growing or laying period.

Adriaan Smulders, strategic marketing and technology lead, poultry and additives EMEA, with Cargill, explains: "Precision nutrition/mineral efficiency brings better welfare for the birds and optimal use of raw material resources.

## Sustainability tips for the poultry, feed industries: www.WATTAgNet.com/articles/26729

"A tailor-made diet will ensure that the animal can use the building blocks of the feed as efficiently as possible. This will lead to less loss of valuable nutrients. By feeding the birds what they need, less is wasted."

He continues that better nutrition can also mean healthier birds, less likely to be prone to disease. With better nutrition, more birds will grow optimally, survive and produce more protein.

The transport of feed or additives has an environmental impact, and the closer to home any sustainably produced ingredients can be sourced, the greater the likelihood of reducing environmental impact.

But transport emissions may be small compared with those from milling itself, and concentrating production in fewer, larger mills may be more efficient than relying on many smaller mills, and become more commonplace.

#### Intelligent systems on-farm

As larger mills may be more sustainable for feed production, the same could be said for larger farms. Economies of scale can result in more efficient resource allocation and make the use of precision agriculture, and its necessary investment, more feasible.

Sophisticated house management systems, able to control environments and feed and optimize perfor-



#### SUSTAINABLE POULTRY PRODUCTION DRIVING INDUSTRY ADVANCES

mance, require investment, possibly beyond small producers. Such systems not only regulate inputs but also alert producers to problems.

From increased biosecurity to robots that "live" among flocks, technology will increasingly be applied, optimizing performance, minimizing waste and losses and improving a farm's environmental credentials.

Producers may have to cease seeing themselves simply as producers of food, and increasingly as producers of food and energy, as waste becomes a growing issue and the technology to process it improves and becomes cheaper. Several producers are already well advanced on this path and are net energy exporters.

Yet large-scale "industrial" farming can be rejected by consumers who often see sustainability as rooted in traditional farming methods, for example free-range egg production, with less technological input, and this may be a barrier that producers will have to overcome if they are to be truly environmentally sustainable.

#### Addressing consumer attitudes

Consumer views on farming are not the only attitudes that poultry and egg producers may have to address as sustainability pressures grow: attitudes to food itself may need to change, requiring new consumer relationships.

Animal protein production tends to consume more resources than producing plant protein, and calls to reduce meat consumption in developed countries or to impose a meat tax to protect the planet have emerged.

While many would argue against such calls, the rationale becomes less unacceptable when taken in the context of food waste.

A study based on FAO data by climate change group Champions 12.3 found that in North America and Oceania, consumer food waste stands at 61 percent, while Europe scores 52 percent. A separate study in the U.K. found that chicken is the most wasted meat.

The poultry industry may be seen as the most sustain-

able of all land-based animal production, but if its output is wasted, there is no sustainability.

As part of any sustainability program, producers may have to engage consumers in new ways, perhaps encouraging consumption of all poultry meat — be it white or dark — reducing the need to ship product around the world and satisfying demand with local production.

Detailed sustainability reports are likely to become more common, but it may also be necessary to encourage consumers to live up to the standards they demand of the industry.

#### From farm to fork

A superficial approach to sustainability may become unacceptable, particularly as requirements for transparency build and governments intervene, and there are examples where the poultry industry is already leading the way.

For example, JBS has been recognized by the Carbon Disclosure Project, a global disclosure system enabling measurement and management of environmental impacts, as a top five company in Latin America for water management and security in the Program Supply Chain. The company's Sustainable Water Management Program in Brazilian facilities has been selected by the Getulio Vargas Foundation Sustainability Study Center as one of Brazil's 10 most innovative corporate water management initiatives.

But sustainability is a journey, not a destination. 2 Sisters, for example, which is already carbon neutral and a net energy producer, published ongoing targets for its facilities and supply chains, scrutinizing farm to fork.

Andrew Edlin, 2 Sisters sustainability director, says: "Having a plan in place is only the start. To be really effective, we know that our people, customers and partners have to understand what we are trying to do and why, and be engaged in working with us to meet these goals.

"To ensure we are working towards the right visions and targets, the entire Feeding the Future program will be reviewed at least every two years by a cross-sectional group of people from business and third parties as appropriate."

This is the ninth article in WATT Global Media's 100-year anniversary series, which considers the future of poultry processing. The next article in the series will explore industry structure.

## Millennials and livestock:

## A mindset worth changing

Millennial consumers are self-experts, making it difficult for producers to teach them fact-based information.

BY DEVEN KING

Millennials believe they are self-experts, explained Richard Kottmeyer, senior managing partner with Farm to Fork Advisory Services, at the 2017 Chicken Marketing Summit in Asheville, North Carolina, on July 17. This makes marketing products from the poultry industry to them a challenge. Consumer research based around millennials can be summed up in five points.

they will believe the poultry producer is trying to hide something.

"I call it the 'duh' principle," he said. "If you can't reach the consumer with the 'duh,' you are simply going to lose."

2 A desire for ironsportancy

There are a couple of other things producers need to understand about the millennial consumer.

Millennials believe in transparency, for instance.

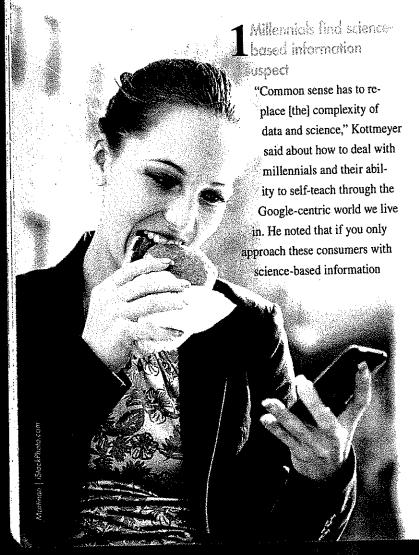
Kottmeyer said nine out of 10 millennial women have taken and distributed nude or semi-nude pictures of themselves.

That statistic pushed him to ask producers the question: Is your brand as naked and vulnerable as what the statistic says the consumer is?

"If your brand isn't naked, it isn't going to last very long," Kottmeyer said.

Millennials think any sort of brand privacy is a way for producers to hide facts. Kottmeyer said this generation is all about the character of a brand or company. Millennials relate to companies' products with which they can see a benefit, even if they don't exactly know what that benefit means.

The fourth point is that "Food has become a luxury or statement item versus a necessity," he said. He explained that chicken is no longer just chicken.



#### A MINDSET WORTH CHANGING

For instance, organic products appeal to consumers simply because they're labeled differently, even if the consumer doesn't fully understand what that label means. The consumer may simply believe the product to be better because it's labeled differently.

Millennials struggle with self-identity

The final point Kottmeyer made from the consumer analysis reports is that millennials struggle with self-identity.

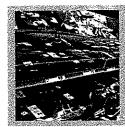
"No judgment being made, but there are 58 ways to gender identify now on Facebook," Kottmeyer said. What this means is the millennial generation is trying to find themselves. If an individual feels lost, they don't know what to believe other than to follow the trend. Poultry and producers must create that trend.

#### How to deal with the millennials

Millennials are not set in what they want; they just follow the trend they believe to be popular. For them to follow a trend, they need to be inspired and coached.

"Be willing to counter punch," Kottmeyer said when he explained that instead of producers following the trends they should be starting a new trend of their own.

The best thing a producer can have on their side is a soulful brand that stands for something and allows the millennial to relate to the company.



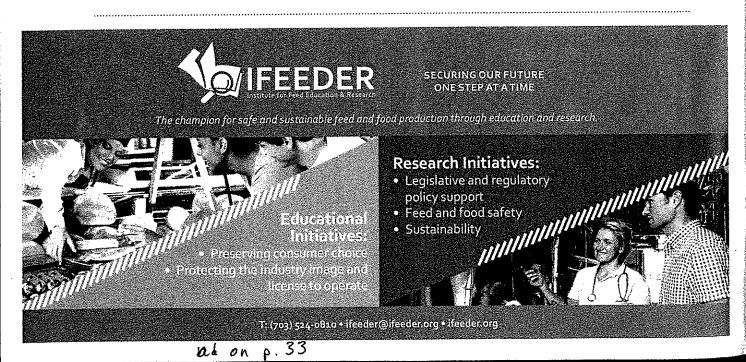
Rand: Millenmols buy protein: but movbe not meat www.WATTAgNet. com/articles/26246

### A new form of common sense for millennials

Pets have become like children to a millennial. Therefore, they trust vets even more so than they do their own family care physicians. Some of this may have to do with the fact that pets can't tell you if they feel better so pet owners believe the vet when he or she says the animal is better, Kottmeyer said. Consumers don't see the same vet treating their pet as the vet also treating poultry and other livestock.

#### Chicken Marketing Summit 2018

Chicken Marketing Summit uniquely explores issues and trends in food marketing and consumer chicken consumption patterns and purchasing behavior. In addition to educational sessions, attendees have numerous networking opportunities to foster interaction between speakers and fellow poultry industry peers. Chicken Marketing Summit 2018 will take place at the Four Seasons Resort Orlando at Disney World in Orlando, Florida, July 22-24, 2018.



## Future of poultry welfare: What producers can expect

Attitudes to poultry welfare still vary greatly from market to market, but ever-more alignment can be expected as interest in animal welfare grows.

BY MARK CLEMENTS

Poultry producers can expect welfare pressures to continue growing, probably at a greater pace than they have seen to date, necessitating ongoing changes to broiler and layer management.

Various welfare bodies emerged in the 19th century, growing in number in the 20th, but it has been in the 21st that interest has spread and intensified, and there are no signs that the pace of change will abate.

Welfare is a focus now not only of governments and interest groups but, increasingly, of multinational companies, and the latter will have ever-greater influence on the future of poultry welfare.

Even in societies where welfare is deemed a prior-

ity, a one-size-fits-all view remains on a far distant horizon, but the interest, and a follow-thy-neighbor approach, will see the world become ever more aligned.

For those that resist incorporating welfare demands, it is worth remembering that certain practices now standard in many markets, for example stunning preslaughter, were once novel.

#### On the near horizon

Developed-world producers are already confronting a number of challenges that may eventually spread throughout developing markets, with commitments to phase out layer cages, perhaps the most high profile. The compromise solution in Europe implemented only a few years ago – furnished cages — is increasingly unacceptable, high-lighting the pace of change.

For egg producers, this will not simply be new investment, but thoroughly reviewing flock management, and where welfare is concerned, views are mixed on benefits for birds:

Interest in slower-growing birds is a similar example of how welfare attitudes vary greatly between groups, as speed of growth alone is not universally seen as among the best welfare indicators. Nevertheless, welfare-motivated consumer demand in this area continues rising and the industry must respond.

Where beak trimming is concerned, banned in some countries and regions, its prohibition could become more commonplace. Abandoning the prac-



tice may require producers to offer birds greater stimulation and alter feeding methods, and there are ongoing studies into how helping producers manage untrimmed birds. But rejection of trimming is unlikely to become universal.

According to Dr. Claire Weeks, senior research fellow in animal welfare at Bristol University's School of Veterinary Sciences, certain markets demand it, but it will remain niche in the short term.

And it may be the case that, as pressure on the practice increases, the need to beak trim diminishes. Changes at the genetic level may be the answer, as genetics companies look to develop birds less able to inflict harm.

A British Veterinary Poultry Association (BVPA) spokesperson explains: "Selective breeding has generated significant physical alterations, many of which would be regarded as welfare positive and void the need for mutilations."

#### No longer an interest group preserve

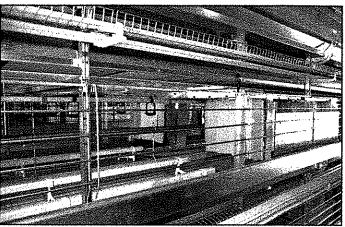
The drivers of welfare are changing. Large corporations are taking a growing role not only in response to consumers, but picking up public sector responsibilities in countries favoring smaller government.

Where one major company leads, others follow. McDonald's 2015 announcement that all its eggs in the U.S. and Canada would come from cage-free birds was followed by others committing to do the same. This ripple effect continues.

Ignacio Blanco-Traba, senior global sustainable sourcing with McDonald's Corp., has said that McDonald's customers want to know more than ever how animals are reared and, being global, McDonald's applies its welfare policies worldwide.

Retailers will also put more demands on producers. It is Europe's retailers — not legislators — that are bringing an end to enriched cages.

Companies increasingly deem welfare a "key business issue," says Compassion in World Farming (CIWF). More are signing up to its Business Benchmark on Farm Animal Welfare (BBFAW) — established with World Animal Protection and Coller Capital — designed to drive higher welfare in food



son Smalley

Enriched cages, seen as addressing certain welfare concerns, were the choice of many European egg producers at the start of the decade. Consumer and supermarket pressures, however, mean that this option is already being rejected.

business. The latest BBFAW includes 99 companies.

It will not only be the poultry industry's clients that drive welfare, but its suppliers too. As the industry becomes increasingly standardized, genetics companies will have little interest in supplying birds that perform poorly in changed production system.

#### Science or no science

The role of large corporations may be a mixed blessing. On one hand, they want suppliers to succeed, offering rules, sharing best practice and support. Private assurance schemes can be highly effective, but will only lead to genuine welfare improvements if properly designed.

Ultimately, consumer-facing food businesses will align with customers' perceptions. Despite good intentions, these perceptions may be neither good for bird welfare nor producers and, as the world becomes more interconnected, views are quickly shared across communities and geographies.

Dr. Weeks notes how social media has changed sourcing in the U.S. and how this is spreading: "Millennials are the ones on social media, and their ideas spread very quickly. But the people driving the agenda are ill-informed. The reality is wildly different to what consumers think."

Yet alongside the consumer welfare interpretation,



#### FUTURE OF POULTRY WELFARE:

there is a growing body of scientific evidence and sciencebased recommendations that can help to improve poultry welfare in a measurable way. As this increases, it will become ever harder to simply dismiss all welfare demands as being part of an ill-informed animal rights agenda.

According to the Universities Federation for Animal Welfare: "Science informs, motivates and facilitates advances in animal welfare by providing a strong evidence base for changing attitudes and practices, and by creating practical and effective solutions to welfare problems."

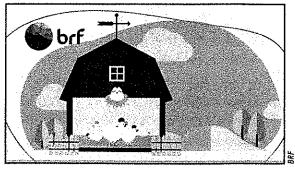
How welfare demands shape future poultry production will depend on who controls the agenda.

#### Ever less a rich world concern

Welfare is often viewed as a developed world concern. unaffordable for the developing world. Yet as the developing world becomes richer, demanding more meat, its consumers will become more sophisticated. Once volumes are satisfied, consumers tend to move towards perceived quality.

But will the developing world be able to afford welfare standards with so many mouths to feed and priorities to meet?

The BVPA points out that, for much of the developing world, bigger issues for producers may include extremes of climate, natural predators and endemic diseases, and these may outweigh any welfare "benefits" from free range, for example. However, it also notes that it will be the expanding aspirational middle class with disposable income that will be likely to drive meat and egg production in some developing countries.



Global players, including BRF, are increasingly keen to emphasize their welfare credentials.

(FAO), a lack of welfare legislation may be keeping producers out of international markets.

Yet change is occurring. Of the 99 companies in the latest BBFAW, 11 are from outside Europe, the U.S. and Canada, including from Brazil, China and Thailand. CIWF says that welfare allows companies to move up the value chain and enter new markets.

#### Future barrier to trade?

As welfare develops piecemeal, there is a risk of more divergence. In practice, however, countries developing welfare codes tend to look to what others have already implemented, resulting in broadly similar standards. Looking longer term, however, the danger grows that welfare becomes a trade barrier.

Welfare trade disputes remain a long way off, but the World Trade Organization is paying attention to the area. In 2014, it rejected appealed EU ban on seal products, finding that non-trade concerns, such as welfare, can restrict trade.



#### (a) Tips for implementing broiler chicken welfare guidelines: www.WATTAgNet.com/articles/20668

Standards that may appear to have little immediate local value may, in fact, offer poultry producers opportunities. Take, for example, Brazil, which, with only a small Muslim population, has become the world's largest halal chicken exporter, responding to overseas demand.

According to the Food and Agriculture Organization

That concerns are spreading cannot be denied. As Dr. Weeks points out, within Europe, welfare was a northern European issue, but is now Europe-wide and extending through trade deals. In Australia, 15 years ago, 10 percent of egg production was free range — it is now 50 percent. As consumers demand more welfare, producers must respond.

This is the fifth article in WATT Global Media's 100-year anniversary series, which considers bird welfare. The next article in the series will explore industry structure.

#### **NEXT ON THE PLATE**

## Broiler welfare: the conversation you need to have

Activists groups have successfully lobbied mainstream restaurant chains like Subway, Burger King and others to make future chicken meat purchase pledges that include breed selections.

BY TERRENCE O'KEEFE

Activist groups have been extremely successful at securing future purchase pledges from major retail and foodservice poultry buyers for chicken meat from birds that have been either raised without antibiotics at all or without use of antibiotics that are designated as important in human medicine. A similar campaign has succeeded in securing future cage-free egg purchase pledges that may very well lead to a complete conversion of the U.S. egg industry to cage-free housing for pullets and layers.

Now, a third campaign is being waged to secure future purchase pledges from chicken meat buyers that would set new standards for how U.S. broilers are raised, stunned and even the breed of the bird that is raised.

In spite of record live performance metrics, such as low farm



Sara Lilygren, formerly VP corporate affairs, Tyson Foods



Jack Hubbard, VP marketing, American Humane Association



Jerome Lyman, formerly VP global quality systems, McDonald's

mortality and low condemnation figures at the processing plant, the Global Animal Partnership welfare purchase pledge campaign is gaining traction. Some U.S. restaurant chains and foodservice distributors, including mainstream ones such as Subway, Burger King, Jack in the Box and Red Robbin, have already made pledges to purchase chicken in the future that complies with Global Animal Partnership welfare standards. These standards include possible breed changes, reduced stocking densities in the broiler house and controlled atmosphere stunning at the processing plant; it is time to have a conversation about broiler welfare.

The Chicken Marketing
Summit will host a panel of experts with experience communicating with activists, buyers and consumers to discuss the issues and the types of conversations that poultry marketers need to be having with both consumers and poultry buyers.

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- Sara Lilygren, formerly VP corporate affairs, Tyson Foods
- Jack Hubbard, VP marketing, American Humane Association
- Jerome Lyman, formerly VP global quality systems, McDonald's ■

The Chicken Marketing Summit will be held July 16-18 at the Grove Park Inn, Asheville, North Carolina. For more details on the Chicken Marketing Summit, please visit <a href="https://www.wattglobalmedia.com/chickenmarketingsummit">www.wattglobalmedia.com/chickenmarketingsummit</a>

## Making the business case for sustainability

As pressure on resources grows, businesses must look to source ever-more efficiently to help ensure supply.



The pressure on food businesses to meet sustainability goals is increasingly coming not only from consumers and retailers, but also from external stakeholders, including civil society, new competitors, social media and governments. But alongside these pressures, there is also pressure of ensuring long-term, reliable supplies.

Speaking at the International Production & Processing Expo (IPPE) Animal Agriculture
Sustainability Summit, Jack Scott, head of sustainability
North America with Nestle Purina Petcare, explained that the sustainability business case for his company was simple: The company needs to ensure a supply of ingredients while faced with growing constraints. Its sourcing strategy must ensure productivity gains to bring about long lasting, reliable supply chains.

#### **Guiding principles**

Nestle Purina, which needs 250-270 million birds to be slaughtered in the U.S. each year to supply byproducts for its business, has three guiding sustainability principles: maintaining compatibility with human food systems;

Read more online: 5 sustainable development goals for poultry producers, www. WATTAgNet.com/articles/29534

diversity in its supply chain portfolio; and, using sciencebased efficiencies and outcomes based on metrics.

Where compatibility with human food systems is concerned, the company will never enter a space not occupied by human food, so, for example, if the egg industry goes cage free, Nestle Purina will do the same.

#### Working in partnership

Purina's largest environmental impacts come from its supply chain and, so, it works with suppliers to help reduce this. Where animal protein is concerned, 70-80 percent of that impact comes from feed production.

Working in partnership, however, is not restricted to simply working directly with suppliers. The company has recently initiated "value projects," for example helping to reduce water run-off in agricultural areas from which it sources.

Where retailers and consumers are concerned, the company is committed to transparency and to communicating in a way that these groups will understand.

But this not always easy: The benefits of taking a "nose to tail" approach in using all parts of an animal is often rejected by consumers, despite the sustainability of this approach.

Too many companies are failing to commit to sustainability, Scott argues. ■





Overcoming disagreements counts on understanding biases on both sides and listening to what both parties argue and seeking out common values.

**AUSTIN ALONZO** 

Persuading people to change their mind is exceedingly difficult, but there is a formula that can be followed to make it a bit easier.

Tamar Haspel, a food columnist for the Washington Post, spelled out seven tactics to improve communication between parties who strongly disagree. Haspel, appearing as part of the 2017 Sustainable Agriculture Summit in Kansas City, Missouri, on November 15, 2017 spoke about how people's minds become made up on controversial issues like climate change or the use of genetically modified organisms (GMOs) in the food chain.

Even though the majority of the science is conclusive, people are still dug in on their side of the issue. Changing how the discussion is approached – and changing the mindset about the other party's arguments – can help make conversations between opposite sides more productive.

#### The elephant in the room

The primary thing to understand, Haspel said,

is how people form their opinions. She used the metaphor of the elephant and the rider. The rider represents logical thought. The elephant represents impulse and instinct. People like to think the rider is in charge – that they are making decisions and forming value judgements based on rational deduction – but in reality people are more likely to choose based on feelings, emotions and intuitions. The elephant leads the rider.

Furthermore, everyone is susceptible to confirmation bias. This is favoring of facts and sources that back up a preconceived opinion and the rejection of facts that challenge it. Because of this, people actively seek out information sources that confirm their views.

Even though we live in an age of widely available and easily accessible information, people are more polarized than ever due to these two factors. This condition is a tough obstacle to clear, but it is possible.

#### IMPROVE COMMUNICATION

### 7 steps toward better communication

#### 1 Be convinced

The first step is to acknowledge that everyone makes their decisions the same way – and often illogically – and that being on one side of the issue doesn't necessarily display immunity to this decision-making pattern. After taking this into account, it's easier to work with people who disagree on a given topic.

## Reconsider the concept of bias

Everyone carries their own biases. Biases are part of the hu-



Tamar Haspel, a food columnist with The Washington Post, said people need to understand the decision-making process in order to improve their communication. | Austin Alonzo

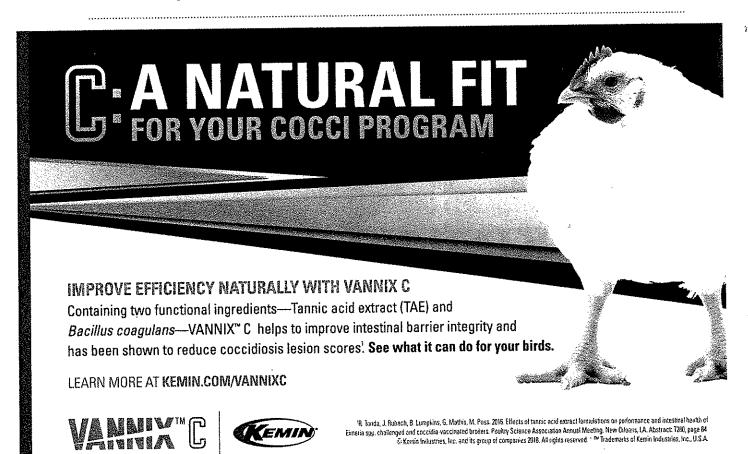
man condition, Haspel said, not something only "bad" actors have. Acknowledge biases.

## 3 Find the smartest person who disagrees with you and listen

It's important to listen to what the opposition is saying. Haspel said that, in her writing process, she always seeks out the most intelligent person who disagrees with her and speaks with them. By listening to the opposition, she learns more.

## 4 Identify the other side's strongest arguments

Much of the frustration on both sides of a given issue is because of petty disagreement. Even people on opposite sides of an issue likely share



more values and share legitimate concerns about common issues. Try to find and focus on the common ground between opposing parties.

## 5 Drop 'anti-science' from your vocabulary

Never say someone is "antiscience." Everyone is pro-science, when it supports their position, and anti-science, when it doesn't back their view. Some people are more scientific or analytical than others, but accusing someone of being antiscience is the same as calling them a "bonehead," Haspel said, and it won't further the discussion.

#### 6 Vet your sources

Along with acknowledging and examining biases, it's necessary to recognize personal sources of information and understand the biases inherent in those sources. Ask: Is my media landscape made up of similar people saying the same thing about a given controversial issue or is it populated by different people with diverse opinions? Does my news come from one source or several?

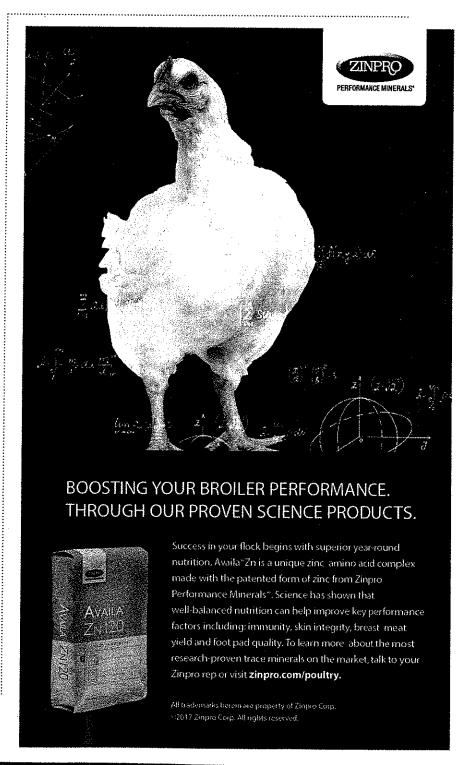
#### Reach across the aisle

The most important concept is to reach across the aisle. Be in the same room with people who disagree, she said.

"Talk to them. Listen to them. Find out what they do in their spare time. Look past what you believe them to be wrong about to try and

Read more: Chicken producers must speak fearlessly on issues, www.WATTAgNet.com/articles/31332

understand the values that underlie those positions," Haspel said. "Because you might find that they're not so different from your own. And ultimately facts don't persuade people, but people persuade people."



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