

# WATTPoultry

The magazine for the integrated poultry industry

# USA

NOVEMBER/ DECEMBER 2024

## Salmonella control in poultry takes center stage

Foot pad lesions in broilers:  
Causes, concerns and mitigation

Why antimicrobial stewardship needs  
a new definition

SCAN HERE



WATTPoultryUSA-digital.com

# DECADES OF INNOVATION IN POULTRY PACKAGING SOLUTIONS



**Discover Amcor to learn more about packaging that  
enables consumer trends, drives operational  
efficiencies and grows share for brands.**



**Choose better with Amcor.**

800-544-4672 | [NorthAmericaFlexibles@amcor.com](mailto:NorthAmericaFlexibles@amcor.com)



# WATT Poultry USA

The magazine for the integrated poultry industry

WATT GLOBAL MEDIA

## COVER STORY

### 10 Salmonella control in poultry takes center stage

With newly proposed guidelines putting food safety in the spotlight, accurate monitoring programs are more important than ever.

ELIZABETH DOUGHMAN

## FEATURES

### 16 Product Spotlight - Food Safety

### 18 Foot pad lesions: Causes, concerns and mitigation

SAMUEL N. MWANGI

### 22 Why antimicrobial stewardship needs a new definition

ROY GRABER

### 26 Retention problems facing poultry processors

EMMA COTTRELL

### 30 Breast meat quality disorders in modern broilers

IOANNIS MAVROMICHALIS

### 34 Positioning chicken to win with the consumer of 2035

MEREDITH DAWSON

### 38 Holistic water management benefits Alabama processor

JOHN PIERSON

### 42 6 must-attend education programs at 2025 IPPE

ANDREA GANTZ



Cover image by: TopMicrobialStock / iStock.com

## NEXT ON THE PLATE

### 2 » Cultivated meat bans spread through US

ELIZABETH DOUGHMAN

### 6 » Inventory shifts reflect changes in whole turkey consumption

MARK JORDAN

### 8 » Environmental award program highlights industry sustainability

PAUL J. BREDWELL, III

### 9 » Technology to improve poultry welfare and sustainability

TERRENCE O'KEEFE

## DEPARTMENTS

3 WATTPoultry.com

4 Podcasts

44 Product Review

48 Market Place

48 Ad Index



# » NEXT ON THE PLATE

## Editor's Comment BY ELIZABETH DOUGHMAN



# Cultivated meat bans spread through US

**C**ultivated meat only received regulatory approval from the U.S. Department of Agriculture (USDA) less than two years ago, but several states have already introduced legislation that would ban its sale.

In Florida, a bill signed into law earlier this year by Florida Gov. Ron DeSantis made it “unlawful for any person to manufacture, sell, hold or offer for sale or distribute cultivated meat in this state.” Cultivated meat — also known as cell-cultured or lab-grown — is a product derived from animal cell cultures designed to mimic the taste, texture and appearance of real animal products.

“Florida is taking a tremendous step in the right direction by signing first-in-the-nation legislation banning lab-grown meat. We must protect our incredible farmers and the integrity of American agriculture. Lab-grown meat is a disgraceful attempt to undermine our proud traditions and prosperity, and is in direct opposition to authentic agriculture,” said Florida Agriculture Commissioner Wilton Simpson.

Businesses in violation of this rule could face disciplinary action and/or lose their license, while a person found guilty would be charged with a second-degree misdemeanor.

Lawmakers in Michigan, Alabama, Nebraska and Iowa have all proposed similar regulations that prohibit the production and sale of cultivated meat in 2024. A bi-partisan bill enacted in 2024 prevents the use of cultivated meat being served at school lunches. Additional U.S. states may also have bills banning the alternative protein by the time this makes it to press.

## Little to fear from cultivated meat

Whether banned or allowed, I think the poultry industry has little to fear from cultivated meat.

Despite its USDA approval, cultivated meat is not yet for sale in retail and only available at a few upscale restaurants at a price point too high for most consumers. While advocates of the alternative protein tout its sustainability, many others still question the safety and cost of cultivated meat, especially compared to animal proteins produced by traditional agriculture.

While there is always an audience for alternative proteins, remember all the excitement about plant-based proteins a few years ago? Sales of plant-based proteins have dropped to below pre-2020 levels with a downward trend expected through 2029, according to a 2024 Mintel report. There is little reason to expect cultivated meat sales to perform any differently. ■

# WATT Poultry USA



WATTPoultry.com

## CORPORATE HEADQUARTERS

401 East State Street, 3rd floor  
Rockford, IL 61104 USA  
Tel: +1.815.966.5574

## Contact us at:

[www.wattglobalmedia.com/contact](http://www.wattglobalmedia.com/contact)

## Subscription questions:

+1.855.896.3491

[wattpoultryusa@omeda.com](mailto:wattpoultryusa@omeda.com)

## Publisher:

Greg Watt

## Director of Content:

Terrence O'Keefe

## EDITORIAL TEAM

Editor-in-Chief: Mark Clements

Editor: Elizabeth Doughman

Digital Content Director: Jim Winter

Managing Editor: Meredith Dawson

Associate Editor: Emma Cottrell

Senior Reporter: Roy Graber

Social Media & SEO Editor:

Kathleen McLaughlin

## ART/PRODUCTION TEAM

Senior Art Director: Tess Stukenberg

Production Manager: Jim Riedl

Senior Production Coordinator:  
Connie Miller

## SALES TEAM

### USA/CANADA

Sales Director - Agrifood: Chad Forster,  
Midwest, West, Canada

Regional Manager: Mary Harris,  
East, Southeast

### EUROPE, LATIN AMERICA, ASIA, AFRICA

Tineke van Spanje

### CHINA

Dingding Li

## SOCIAL MEDIA



<https://www.facebook.com/WATTPoultry>



[www.youtube.com/WATTPoultryTV](http://www.youtube.com/WATTPoultryTV)



<https://www.linkedin.com/showcase/WATT-Poultry>

**WATTPoultry®** Click the links to read WATTPoultry news  
 ► [www.WATTAgNet.com/topics/459](http://www.WATTAgNet.com/topics/459)

## Thanksgiving turkey might be all Americans can agree on

Views on holiday prep are relatively similar across the country.  
[www.WATTAgNet.com/15704411](http://www.WATTAgNet.com/15704411)



Courtesy Hormel

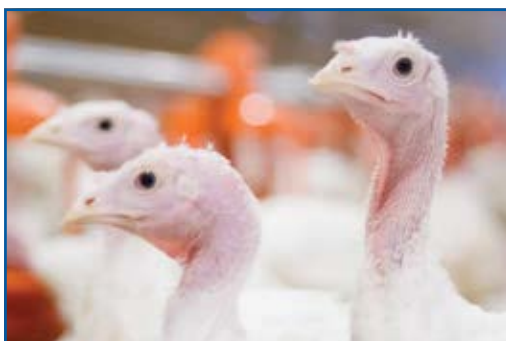


nkoume | BigStock.com

## USDA funds poultry processing training center in Puerto Rico

Project aims to both develop a skilled workforce and reduce the island's dependence on imports.

[www.WATTAgNet.com/15704879](http://www.WATTAgNet.com/15704879)



Courtesy Big Dutchman

## USDA: 6% fewer turkeys expected to be raised in 2024


Of the 13 largest turkey producing states, only four are expected to raise the same number of turkeys in 2024 as they did during the previous year.

[www.WATTAgNet.com/15704697](http://www.WATTAgNet.com/15704697)



**REDUCE AERIAL AMMONIA**  
**IMPROVE AIR QUALITY**

**micro-aid.**



LEARN MORE AT **DPIGLOBAL.COM**

# FUTURE OF POULTRY PODCAST



## FUTURE OF POULTRY PODCAST SPOTLIGHT ON WHAT'S NEXT FOR THE POULTRY INDUSTRY



### Phage therapy in the poultry industry

Mark Clements talks to Pablo Cifuentes, chief technology officer with PhageLab, about how phage use in the poultry industry is set to increase.

[www.WATTAgNet.com/15683368](http://www.WATTAgNet.com/15683368)



Scan the QR  
code to listen.



### Farmer Focus puts the grower first in consumer marketing

In WATTPoultry's latest podcast, editor Elizabeth Doughman and Farmer Focus brand manager Abi Vincill discuss how the producer's marketing focus on growers connected with consumers.

[www.WATTAgNet.com/15681456](http://www.WATTAgNet.com/15681456)



Scan the QR  
code to listen.





**LA CUMBRE AVÍCOLA  
LATINOAMERICANA**

## **Join the Leaders Shaping the Future of Poultry at the 2025 Latin American Poultry Summit**

**Where the Latin American Poultry  
Industry Finds Solutions**

**Jan. 27, 2025 | Atlanta, GA USA**

The 2025 Latin American Poultry Summit, held in conjunction with the International Production & Processing Expo (IPPE), will feature a stellar lineup of researchers, scientists, business leaders and poultry industry experts who will discuss global trends and economic, production and processing issues of highest priority for Latin American poultry companies.

**Register today at [ippexpo.org](http://ippexpo.org)!**

**Supporting partner:**

**WATTPoultry**



**In collaboration with:**

**USPOULTRY**  
U.S. POULTRY & EGGS ASSOCIATION



**More information at**

**[lacumbreavicolalatinamericana.org](http://lacumbreavicolalatinamericana.org).**

## » NEXT ON THE PLATE

### Poultry Market Prospects BY MARK JORDAN



# Inventory shifts reflect changes in whole turkey consumption

Total frozen stocks of whole turkeys this year are on track to post lowest annual average since the mid-1980s.

The pandemic upended supply chains and impacted consumer behavior in ways that are just now being fully understood with the benefit of hindsight. It has generally been viewed as contributing more positively than negatively to protein demand, but as the years go by, it increasingly seems the longer-term impact on turkey — and whole birds, more specifically — has been a net negative.

Whole turkeys have long been a centerpiece of holiday gatherings and meals, Thanksgiving most prominently but also Christmas and Easter to a lesser extent. Anecdotal evidence suggests that holiday gatherings in the United States have been dwindling in size for quite some time already, but the pandemic clearly accentuated the trend.

#### Demand fallout

It's not that traditional holiday offerings have fallen completely out of favor now that gatherings have gotten smaller, on average, but the number and size of those

offerings are being “tweaked.” For a group of 25+ family and friends, preparing two 16–18-pound toms might be sufficient, or at least a good starting point. By contrast, a group of 8 people might view one 10–12-pound hen as being more than enough.

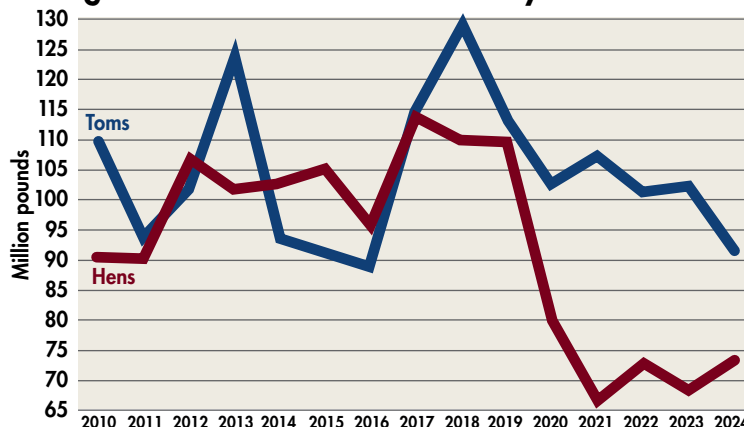
With the latter example becoming far more common than the former, it suggests less of a need for bulkier offerings, like whole toms, and more of a

need for smaller offerings such as whole hens and, going another step down the size ladder, bone-in whole turkey breasts. There is evidence that whole turkey demand has languished across the board in recent years, but looking at the category more closely, it's heavier-sized birds leading the charge lower.

#### Inventory adjustments follow

Cold storage adjustments in

#### Average Annual Frozen Whole Turkey Stocks



Total cold storage stocks of whole turkeys stood at 246 million pounds as of July 31st, 2024. Prior to July 2023, that was the smallest end-of-July total since 1985. Sources: USDA, LEAP Market Analytics (2024 forecast)



recent years appear to corroborate changing consumption patterns. Frozen hen stocks averaged nearly 103 million pounds annually during the 2010s and averaged just shy of 110 million pounds in 2019 before plunging to 79 million pounds in 2020 and less than 67 million pounds in 2021.

Reduced output has certainly been a contributing factor, but it's clear that relatively stable hen consumption has removed any hint of a "surplus" from the supply chain. The recovery path has been slow, but buyers are slowly putting more hens back into cold storage during the year to stay on top of resilient, if still mediocre, demand in this segment.

By contrast, frozen tom stocks were not drawn down as aggressively during the pandemic as end user interest did not hold up as well as it did for hens. As interest in heavier-sized toms has waned further in recent years, frozen stocks in this segment have kept trending lower on an average annual basis, with buyers incrementally adjusting to falling demand in this specific weight category.

### Questions abound for producers

Combined frozen stocks of hens and toms averaged just shy of 171 million pounds in 2023, which marked the lowest annual average since 1984, and average inventory levels this year are on track to be even smaller. While changes for the heavier-sized tom

category are more significant — and negative — than with lighter-sized hens, it's clear a historic shift is underway for the entire whole turkey segment.

The question going forward

is if U.S. turkey producers are flexible enough to get ahead of this shift sooner than later to better match supply with demand and ease this period of financial stress on the sector. ■

## When Flock Performance is on the Line,



## You Need a Signal Caller You Can Rely On.

Don't bench your flock, keep your feeders full with the **NEW** SignalPro™ Universal Control Pan.

The new SignalPro™ Universal Control Pan keeps your feeders full and your flock growing, no matter which Chore-Time feeding system you use. The innovative modular design provides easy retrofit between a mechanical switch or high-tech sensor, and offers streamlined maintenance.

An integrated LED light attracts birds to the pan, ensuring consistent feed flow through the entire line. Take your house performance to the next level with the SignalPro™ Universal Control Pan.



Learn more at  
[choretime.com/signalpro](http://choretime.com/signalpro)

Let's grow together™  
[www.choretime.com](http://www.choretime.com)

## » NEXT ON THE PLATE

Poultry's Perch BY PAUL J. BREDWELL, III



# Environmental award program highlights industry sustainability

Past winners have included liquid fertilizer for golf courses and nurseries and decomposable flowerpots.

The “Family Farm Environmental Excellence Award” recognizes family farms across the U.S. for their efforts to protect and enhance the environment.

The award is open to any family farmer who produces poultry or eggs for an integrator or egg processor that is a member of U.S. Poultry and Egg Association (USPOULTRY). Additionally, any independent producer or grower who is a member of USPOULTRY may self-nominate and each affiliated state association may submit two nominees.

A 10-person judging committee made up of agricultural academic professionals, extension personnel, academia and individuals who work in poultry and egg industry evaluate the applicants in numerous areas, including nutrient management, establishment of wildlife habitats and community outreach that educates the public on the poultry and egg industry.

In addition, applicants are asked to provide information on innovative ways they manage their litter and byproducts. The number of novel ideas that have been implemented at the farm level have been remarkable.

The array of products developed has ranged from liquid fertilizer formulated for specific uses, such as golf courses and nurseries, to the production of decomposable flowerpots.

Overall winners from each subregion are selected after two-person judging teams visit each semifinalist to learn more about the farm on a personal level. Each semifinalist from five or six subregions across the country receive an all-expense paid trip to attend the International Production & Processing Expo in January and an awards ceremony that recognizes their efforts. Overall winners for each subregion also receive a cash prize of \$1,000.

## Recognizing advancements in sustainability

As the world's largest poultry organization, USPOULTRY seeks to progressively serve its members on several fronts, one of them being communications. While sustainability has always been at the foundation of agriculture, for too long, the industry failed to convey these principles.

When adversaries to the poultry and egg industry criticize, they often



**These awards allow our industry to respond to and recognize the outstanding efforts poultry and egg producers make to advance the sustainability of our industry.**

*Petmal | iStock.com*

focus on these operations. These awards allow our industry to respond to the one-sided narrative brought by groups that oppose the animal agriculture industry and recognize the outstanding efforts poultry and egg producers make to advance the sustainability of our industry.

More info on the award programs can be found at <https://www.uspoultry.org/programs/environment/> or by contacting Paul Bredwell at [pbredwell@uspoultry.org](mailto:pbredwell@uspoultry.org). ■

*Paul J. Bredwell, III, P.E., is vice president environmental programs, U.S. Poultry & Egg Association. Contact [pbredwell@poultryegg.org](mailto:pbredwell@poultryegg.org).*

## » NEXT ON THE PLATE

## Food Safety &amp; Processing Perspective

BY TERRENCE O'KEEFE



# Technology to improve poultry welfare and sustainability

**New collaboration connects entrepreneurs and tech innovators with poultry supply chain leaders, to seek improvement in welfare and sustainability.**

**P**rice, convenience and taste have pushed poultry meat and eggs past other animal proteins into the top spot of consumer diets around the globe. As consumers have become more affluent and activist groups more vocal, poultry producers are being challenged to demonstrate that the birds they care for are raised with good welfare. Climate change concerns have also triggered greenhouse gas reduction goals throughout supply chains.

These heightened bird welfare and sustainability concerns are challenging for poultry producers. Fortunately, innovators and entrepreneurs are harnessing artificial intelligence, machine learning and electronic sensing devices to deal with these challenges. The Poultry Tech Summit was launched in 2018 by WATT Global Media with USPOULTRY, Georgia Tech Research Institute and the University of Georgia's Poultry Science department as collaborating partners. The Summit will return on November 3-6, 2025, in Atlanta, Georgia, U.S., and

has a new collaborating partner, the U.S. Roundtable for Sustainable Poultry & Eggs (US-RSPE). The US-RSPE Annual Meeting will be colocated with the Poultry Tech Summit next year.

Well over half of the improvements in bird performance, rate of growth, feed conversion and rate of lay that the poultry industry and consumers have benefited from are the result of decades of selective breeding. But new technologies such as pharmaceuticals, vaccines, incubation, disinfection, feed formulation, environmental control, automated feeding and watering have also contributed to advances in efficiency, bird welfare and sustainability.

It is a natural fit to bring members of the poultry supply chain, who are responsible for evaluating and improving the sustainability of poultry products, together with the innovators and entrepreneurs who are working to apply new technologies to today's supply chain challenges. I recently attended the 2024 Poultry Welfare & Sustainability Summit jointly hosted by the US-RSPE and the International Poultry Welfare Alliance (IPWA) in Atlanta September 3-5, 2024. The adage, "what gets measured gets fixed," has always rung true for me. Continuous improvement in bird welfare and supply chain sustainability requires reliable and affordable

means of measuring key performance indicators (KPIs) and technologies that reduce resource use, recycle waste/byproducts and improve bird health and well-being.

The Poultry Welfare & Sustainability Summit started off with a field trip to the University of Georgia's Poultry Science department. Paco Fernandez, DVM, Zinpro, demonstrated a method for evaluating broiler carcasses internally and externally in the processing plant and using this data to continuously improve bird welfare. I invite you to listen to my podcast with Dr. Fernandez and learn more about this approach.

The challenges facing the poultry supply chain are great, but we are in a time of rapid technological advancement; and this creates great opportunity. Please make plans to join us next November in Atlanta for the 2025 Poultry Tech Summit and the US-RSPE Annual Meeting and become part of the conversations and solutions. ■

**Learn how carcass evaluation at the processing plant can be used to monitor bird welfare throughout the life of the flock:**  
[www.WATTAgNet.com/15704782](http://www.WATTAgNet.com/15704782)



# Salmonella control in poultry takes center stage

With newly proposed guidelines putting food safety in the spotlight, accurate monitoring programs are more important than ever.

ELIZABETH DOUGHMAN

**T**here is intense pressure to develop better preharvest approaches to food safety in the poultry industry right now, especially when it comes to *Salmonella*. Detection and surveillance are crucial to reducing incidence and improving control of the pathogen throughout the poultry supply chain.

## Proposed guidelines target U.S. poultry

In October 2022, the U.S. Department of Agriculture (USDA) Food Safety and Inspection

Service (FSIS) proposed framework to reduce *Salmonella* that indirectly expands the department's regulatory control, with a focus on "encouraging preharvest controls to reduce *Salmonella* contamination coming into the slaughterhouse."

USDA FSIS further introduced additional proposed guidance on *Salmonella* in 2024 that had a direct impact on the commercial poultry industry. In April, the agency declared *Salmonella* an adulterant in raw breaded stuffed chicken products when they exceed a specific



threshold (1 colony forming unit (CFU) per gram or higher) for *Salmonella* contamination.

This guidance was followed by the long-anticipated *Salmonella* framework initiating a 60-day commentary period in July. The newest proposal establishes product standards that prevent chicken and turkey products containing *Salmonella* at or above 10 CFU per gram/ml from entering commerce. In addition, the proposed guidance identified Enteritidis, Typhimurium and I,4,[5],12:I:- in chicken and Hadar, Typhimurium

and Muenchen in turkey as serotypes of public health significance that were banned.

Poultry processing facilities are also required to develop microbial monitoring programs to prevent pathogen contamination as a result of the proposed guidance.

“Far too many consumers become sick from poultry contaminated with *Salmonella*, and today’s announcement marks a historic step forward to combat this threat,” said Agriculture Secretary Tom Vilsack. “This proposed framework is a systematic approach to addressing *Salmonella* contamination at poultry slaughter and processing, which includes enforceable standards that will result in safer food for consumers and fewer illnesses.”

The National Chicken Council (NCC) expressed concerns about the proposed rule, calling the new guidance unnecessary.

“There is no silver bullet or one-size-fits-all approach to food safety, which is why we employ a multistage strategy,” Gary Kushner, NCC interim president, said in a statement. “Passing a law or regulation to fight bacteria will not magically make it disappear. This proposal will raise the price of chicken and cause millions of pounds of safe-to-eat, if properly prepared, chicken to be sent to landfills rather than dinner tables — an unconscionable thought given there are 44 million Americans who are food insecure.”

### Preharvest vs. postharvest

*Salmonella* control in commercial poultry has traditionally focused on postharvest approaches, but that is changing with a renewed emphasis on preharvest management.

## SALMONELLA CONTROL IN POULTRY TAKES CENTER STAGE

“One of the main challenges for preharvest is the variability that we see because it’s a biological system. We don’t — and may never — completely



**Dr. Brandon Carter**

*Courtesy Elanco Animal Health*

understand all of the sources of variation and how they occur,” Dr. Brandon Carter, technical advisor, Elanco Animal Health, said.

Variability can occur in several forms when it comes to *Salmonella*. Some flocks from a poultry house may be infected, while others, from the same house, with the same management, may not. Seasonal changes may be in play here, although the verdict is still out on this point, Carter explained.

One of the major challenges of detecting *Salmonella* in poultry is that both chickens and turkeys can harbor the bacteria without becoming sick. As a result, it’s impossible to walk into a poultry house and manually monitor for signs of clinical disease.

Instead, labor is required to collect samples, as well as a laboratory to perform tests. Costs can add up, and testing can take days, holding up the entire process. Despite this, monitoring and surveillance remain important.

“If we don’t look for *Salmonella*, we won’t see it,” he added. “You don’t want to wait until you have a problem.”

### Know which serovars you’re detecting

One solution that could help improve *Salmonella* detection throughout the entire poultry supply chain is a deep serotyping technology that uses isolation independent technology CRISPR-SeroSeq.

Standard *Salmonella* isolation techniques often only identify one or two serovars, even if there are more serovars present. This means that there

could be serovars present in the feed mill, breeding hens, the hatchery, the poultry house and more that producers do not know about. And if producers do not know about *Salmonella* serovars, there is nothing they can do to prevent it from entering the processing plant.

“It’s like going to war at night and not having night vision goggles. You’re just going to be firing



**Arjun Ganesan**

*Courtesy Ancera*

where gunfire is coming at you. You need to be a lot more strategic,” explained Arjun Ganesan, CEO at Ancera.

With CRISPR-SeroSeq, producers can differentiate multiple serovars in each sample collected. This means they are not just detecting the most abundant serotypes in a sample, but also which serotypes are present. Knowing each *Salmonella* serovar, including those of human health concern (HHC), can help producers pinpoint the risk in their supply chain and develop new prevention methods.

### Looking at dietary solutions

Choosing feed and diets that positively impact broiler and turkey gut health and integrity can have a major impact on their immune system.

Adding nutritional supplements such as probiotics



**Ann Wooming**

*Courtesy Arm & Hammer Animal Nutrition*

and prebiotics to poultry diets can further boost a bird’s response to stress and disease challenges. Both types of supplement help colonize broiler and turkey gut microbiome with beneficial microorganisms as opposed to bacteria like *Salmonella*.

“These products have



been shown to boost immune responses, feed the good bacteria in the gut and contribute to an overall healthier gastrointestinal tract,” said Amy Wooming, Ph.D., poultry technical services manager, Arm & Hammer Nutritional Health.

“*Salmonella* will have a much harder time invading and crossing through the gut lumen in the presence of a healthy well-functioning epithelial barrier.”

## Feed withdrawal for *Salmonella* protection

Speaking of feed, the timing of feed withdrawal before slaughter is crucial for better *Salmonella* control, explained Eric Shepherd, DVM, senior technical services veterinarian, Zoetis.



**Eric Shepherd, DVM**

*Courtesy Zoetis*

Feed withdrawal should last between 8-12 hours – no more, no less.

“If you have too long a feed withdrawal, which is almost 100% of the time, it ends up causing cross-contamination in the plant,” he said. “The bird intestines become too fragile. The birds also tend to eat litter, which has *Salmonella* in it.”

The main purpose of feed withdrawal is to reduce contamination and minimize the weight of undigested feed in the bird’s gastrointestinal tract. This is at odds with the natural inclination of broilers and turkeys — eating.

“We’ve bred them to be hungry and put a lot of muscle on fast. If there’s not feed in front of them, they’ll eat what they can find in front of them and generally that is contaminated,” Shepherd continued.

Late feed outages can also have a major impact on *Salmonella* levels in commercial poultry.

“When birds go back on feed, they tend to gorge

feed, and it messes up the entire feed withdrawal period. If you can avoid this, that is a big key to success,” Shepherd said.

## Vaccination options

Although *Salmonella* is quick to evolve against antibiotics, disinfectants and other interventions, vaccine-based strategies at the farm level can help reduce prevalence and/or shedding in poultry flocks.



**Bill Stanley**

*Courtesy Boehringer-Ingelheim Animal Health*

*Salmonella* vaccines are offered in both live and inactivated options. Both have pros and cons, according to Dr. Bill Stanley, senior key account veterinarian, Boehringer-Ingelheim Animal Health.

In the U.S., all live vaccines are *Salmonella* Typhimurium mutants. In other words, they contain live strains of *S. Typhimurium* that have been manipulated so that once they infect the bird, they do not live long.

Live vaccines typically have the greatest effectiveness in protecting the vaccinated birds. Conversely, inactivated or killed vaccines are designed to convey immunity from hen to offspring.

There are limitations to vaccines. One is called homology of protection, which means that vaccines are customized to target specific serotypes. Vaccinating against Typhimurium will not help if the real culprit is Hadar or Enteritidis.

“Vaccines are a very useful tool in protecting flocks against *Salmonella*, but they have to be used as part of an overall plan. You can’t look to vaccines as being the only solution,” Stanley cautioned.

## No one-size-fits-all solution

Keep in mind that no *Salmonella* control strategy is a one-size-fits-all solution and must be

## SALMONELLA CONTROL IN POULTRY TAKES CENTER STAGE

customized and, in all likelihood, combined with



**James Mills**

*Courtesy Ceva Animal Health*

other approaches.

“It’s difficult to adopt a program for controlling *Salmonella* in the breeders that is also capable of protecting broilers,” said James Mills, bacteriology & parasitology project lead, Scientific Support and Investigation Unit, Ceva Animal Health. But, “if you

are not trying to control what is coming into the processing facility, you’re at risk later.”


Despite these challenges, Mills believes *Salmonella* is a problem the poultry industry can conquer, concluding that, “challenges like this have come and gone. There will be more, but the great



**WEBINAR SERIES**


**For more information, watch**  
**Salmonella Surprise:** How Integrators  
 Can Accelerate Compliance with  
 Proposed New USDA Regulations  
[www.WATTAgNet.com/15683342](http://www.WATTAgNet.com/15683342)

thing is that we all face them together with determination and vision toward the end goal, a safe and healthy poultry industry and food supply.” ■




## MAXIMIZE YOUR TIME IN ATLANTA THIS JANUARY

### ATTEND NPFDA'S ANNUAL CONVENTION & SHOWCASE JANUARY 27-30, 2025 | HYATT REGENCY ATLANTA




**VISIT**

Join 30+ protein suppliers and allied companies at the Showcase on **Tuesday, January 28, from 11 am to 3 pm**. All buyers are welcome to attend this **FREE** event.




**SPONSOR**

Sponsorship opportunities will sell out quickly! Act now to increase your corporate exposure and achieve your marketing goals.




**EXHIBIT**

Exhibit space is available. Confirm your spot today and connect with over 1000 potential customers.



**AND MORE**


Numerous networking opportunities available with hospitality suites, breakfast, sponsorship, and awards ceremony.




**AUCTION  
BID**

Join the fun and bid on items or donate cash to the NPFDA Scholarship Foundation and help contribute funds for deserving college students.

**LET'S GO!  
REGISTER TODAY**







**MINTREX<sup>®</sup>**  
Bis-Chelated Trace Minerals

# MINTREX<sup>®</sup> TRACE MINERALS ARE MADE OF MORE

With superior bioavailability and absorption, these organic trace minerals continue to stand out against other trace mineral sources. Organic zinc, copper, or manganese are linked with methionine source HMTBa, providing value beyond traditional minerals. How? The methionine value means lower overall amino acid supplementation. Better bioavailability means fewer minerals fed and lower overall mineral inclusion in the diet. These factors impact the labor at the farm or the feed mill. Fewer minerals, lower supplementation, less labor equal better production efficiency/more money in your wallet. It all starts at [novusint.com](https://novusint.com).

**NOVUS<sup>®</sup>**  
Made of More<sup>™</sup>

Novus International, Inc. | 17988 Edison Ave. | Chesterfield, MO 63005 USA | 1-800-568-0088

@NOVUS and MINTREX are trademarks of Novus International, Inc., and are registered in the United States and other countries.  
TM Made of More is a trademark of Novus International, Inc.  
©2024 Novus International, Inc. All rights reserved.





# PRODUCT SPOTLIGHT Food Safety



## NEOGEN CORPORATION SYNERGIZE DISINFECTANT

- Noncorrosive formulation.
- Effective in hard or soft water.
- Single usage dilution provides effective disinfection.
- Ready-to-use product has a nearly neutral pH.
- Versatile formulation can be applied as a pressurized foam or through manual cleaning.
- Nonstaining formulation.

[www.WATTAgNet.com/15680894](http://www.WATTAgNet.com/15680894)

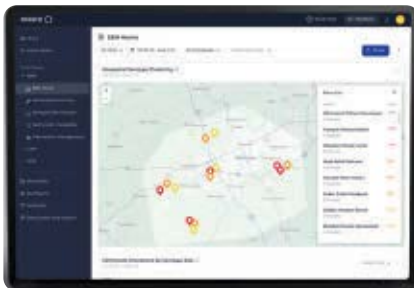
## ELANCO AVIPRO MEGAN VAC 1

- As part of a comprehensive *Salmonella* control program, Avipro Megan Vac 1 is a safe, effective and targeted intervention providing *Salmonella* protection every day.
- Mitigating food safety risk starts by prioritizing bird health, food chain safety and brand protection with a consistent, comprehensive *Salmonella* control program.
- Avipro Megan Vac 1 is a live bacterial vaccine to aid in the reduction of *Salmonella* Typhimurium, *Salmonella* Enteritidis and *Salmonella* Heidelberg colonization.
- Avipro Megan Vac 1 stimulates protective immunity and reduces *S. Typhimurium* (ST), *S. Heidelberg* (SH) and *S. Enteritidis* (SE) infections in young, growing chickens — ultimately contributing to reduced environmental prevalence over time.



[www.WATTAgNet.com/15704820](http://www.WATTAgNet.com/15704820)

## ANCERA SALMONELLA SYSTEM MONITORING (SSM)



- The future of food safety is about reducing the *Salmonella* load and also understanding the types that are present for the most effective interventions.
- Ancera's *Salmonella* System Monitoring combines novel Deep Serotyping technology with an easy-to-use software platform that helps companies become and remain compliant with USDA regulations.
- The technology tracks the prevalence of over 150 serotypes simultaneously, allowing near real-time detection and rapid, data-backed interventions using Ancera's comprehensive analysis to prevent *Salmonella*

from disrupting business operations while enhancing consumer safety.

- SSM tracks *Salmonella* population trends in real time and analyzes data in various categories such as risk, production stage, location and time, allowing producers to detect hidden transmission patterns and risks to swiftly and appropriately intervene.
- With better data and tools, integrators can make informed decisions to enhance safety and profits.

[www.WATTAgNet.com/15704823](http://www.WATTAgNet.com/15704823)



## **Content creation services that maximize audience engagement with your customers**

Don't let a lack of resources impact your marketing results. We bring industry expertise to your projects and meet your team's objectives for unique marketing communications on time and on budget!

Explore our suite of services today.  
**Go to: [Contentamp.studio](https://Contentamp.studio)**

**Scan here for more  
information and to contact us**



# Foot pad lesions: Causes, concerns and mitigation

Environmental, nutritional and management-related factors all contribute to the development of this welfare concern.

SAMUEL N. MWANGI

**T**he export of U.S. chicken paws is a high-value commodity; however, their quality can be affected by foot pad lesions (FPL). FPL in broiler chickens, also known as pododermatitis, is a significant welfare concern and a prevalent issue in broiler production. These lesions are characterized by inflammation, ulceration and necrosis of the paw surface of the foot and can lead to severe discomfort and pain for the affected birds.

The condition not only impacts birds' welfare but also poses economic challenges for poultry producers due to its association with reduced

growth performance, carcass quality and increased susceptibility to other diseases. This article explores the causes, consequences and potential strategies for mitigating foot pad lesions in broiler chickens.

## Causes

Foot pad lesions in broiler chickens are multifactorial, with environmental, nutritional and management-related factors playing crucial roles in their development.

One of the primary environmental factors contributing to FPL is litter quality. Wet and

**One of the primary environmental factors contributing to foot pad lesions is litter quality.** Valerie Loiseleux | iStock.com



compacted litter creates a moist environment that softens the footpad skin and subsequent lesion formation. The type of litter material used, its depth and its management (especially moisture content) are critical in determining litter quality and, consequently, the prevalence of FPL.

Nutrition also significantly influences the incidence of FPL. Diets deficient in essential nutrients such as biotin, zinc and methionine can compromise skin integrity, making the foot pads more susceptible to lesions.

Excess dietary protein or sodium is associated with increased water intake in chickens, which increases litter moisture. Similarly, use of feed ingredients high in nonstarch polysaccharide (NSP) such as wheat in chicken diets without any NSP degrading enzyme can increase gut viscosity which results in fecal content that can stick to the chicken paw and result in damage to the paw skin.

Another key factor is the overall management of the poultry house. Poor ventilation, leading to high humidity levels, can increase the moisture content and ammonia levels in the litter, further promoting the development of FPL.

Additionally, high stocking densities of broiler chickens can lead to reduced bird activity and movement, which leads to prolonged contact

between the foot pads and the litter, which can increase the risk of FPL especially if the litter is wet. Stocking density correlates with litter quality and can also affect feather dirtiness.

## Concerns

Foot pad lesions have serious welfare implications for broiler chickens. Severe lesions cause pain and discomfort, leading to reduced mobility, decreased feed intake and impaired growth performance. In extreme cases, these lesions can become infected, causing systemic infections and higher mortality rates.

Birds with severe foot pad lesions spend more time lying down, which increases the risk of developing breast blisters. These conditions can result in carcass downgrades or condemnation at slaughter, causing financial losses for producers.

Moreover, FPL can have broader implications for the poultry industry. There is growing consumer awareness and concern regarding animal welfare, and issues such as FPL can damage the industry's reputation and lead to increased scrutiny from regulatory bodies. This has prompted many poultry producers to adopt more stringent welfare standards and practices to address the issue.



## FOOT PAD LESIONS: CAUSES, CONCERNS AND MITIGATION

### Mitigation strategies

Given the significant impact of FPL on broiler chickens, various strategies have been proposed and implemented to mitigate the occurrence and severity of these lesions.

One of the most effective approaches is improving litter management practices such as the application of litter amendments to reduce the pH, pathogens and ammonia. Maintaining dry and friable litter is crucial in preventing the development of FPL. This can be achieved through regular litter turning, ensuring adequate ventilation to reduce moisture buildup, and using absorbent litter materials such as wood shavings or straw.

Additionally, managing the litter depth and ensuring that it is replenished as needed can help maintain its quality throughout the production cycle.

Nutritional interventions also play a key role in preventing FPL. Diets should be formulated to meet the birds' nutritional requirements, with particular attention to nutrients that support skin health, such as biotin, zinc and methionine.

The inclusion of feed additives such as organic acids, probiotics and enzymes help to improve gut health and nutrient absorption, which can indirectly reduce the risk of FPL by promoting overall bird health and reducing the moisture content of excreta.

Another important aspect of FPL prevention is optimizing the management of the poultry house environment. Maintaining proper ventilation to control humidity levels, especially during the winter season and managing stocking densities to prevent overcrowding are all essential in reducing the risk of FPL.

Regular monitoring of bird behavior and foot pad condition can also help identify early signs of FPL and allow for timely intervention.

In recent years, there has been increasing interest in genetic selection as a long-term strategy for reducing FPL in broiler chickens. Selective breeding programs that prioritize traits associated with foot pad health, such as skin integrity and leg strength, have the potential to reduce the prevalence of FPL in commercial flocks. However, this approach requires careful consideration to avoid compromising other important production traits, such as growth rate and feed efficiency.

### Conclusion

Foot pad lesions are a significant welfare and economic concern in broiler chicken production. Improving litter management, optimizing nutrition and ensuring proper poultry house management are all critical strategies for reducing the incidence and severity of FPL.

Additionally, ongoing research and genetic selection efforts offer promising avenues for long-term prevention of this condition. By prioritizing the health and welfare of broiler chickens, producers can not only improve the quality of their products but also enhance the sustainability and profitability of their operations. ■

---

*Samuel N. Mwangi, Ph.D., is an assistant professor of poultry science in North Carolina State University's Prestage Department of Poultry Science.*



**4 common poultry leg issues explained**

[www.WATTAgNet.com/15532638](http://www.WATTAgNet.com/15532638)

Valerie Loiseleux | iStock.com

# WHAT COULD MORE DURABLE DO FOR YOUR PLANT?



(Patented finger system)

The innovative design and use of high quality rubber material makes the FeatherFox system a more durable solution in processing plants than individual fingers. These picking pads are built to withstand the rigorous work of defeathering over and over again. Longer lasting fingers mean increased efficiency and decreased production costs.

*"We have been using the Goodyear picker pads for over 5 years, and I can tell you they have made a world of difference!"*

**FEATHERFOX**   
A NEW ERA IN PROCESSING  
[wmgoodyear.com](http://wmgoodyear.com)

SEE ALL YOUR  
ADVANTAGES



Wm.  
**GOOD  
YEAR**  
Co.  
TRUSTED INDUSTRY  
INNOVATION

Take efficiency to the next level > **800.268.7824**

# Why antimicrobial stewardship needs a new definition

The amount of antibiotics used to help keep turkeys and broilers healthy should tell part of the story, but you must also include what you are doing to prevent their use.

ROY GRABER



**Michelle Kromm**

*Courtesy Food Forward*

**A**ntimicrobial stewardship is a growing concern for those in the animal agriculture industry, although the way it is now defined may not be the best approach, said Food Forward principal Michelle Kromm, DVM, MPH, MAM and CACP.

A common definition of antimicrobial resistance today normally falls under some sort of measurement, Kromm said, such as milligrams per pound divided by some output, whether that be pounds of meat, eggs or milk.

“For a lot of us, that’s the equation,” Kromm said. “I personally think we are stuck in a box.”

True stewardship involves much more than antimicrobial use, she said.

## Care and preventive measures matter

“We need to change our beliefs on what stewardship is and is not,” Kromm said. “Stewardship is not measuring the total quantity of antimicrobials used over a period of time. Stewardship is what we do as producers and veterinarians to avoid the use of antibiotics.”

Kromm said measurement of antimicrobial use does need to be part of





One of the bigger challenges that the turkey industry faces that contributes to a comparative higher level of antimicrobial use is there are fewer preventive medicines on the market for them. That, in turn, gives the turkey industry fewer alternatives for antibiotics. *shcherbak volodymyr | iStock.com*

the equation, but rather than it defining your stewardship, it should inform it.

She uses an analogy of an iceberg, and the measured amounts of antibiotics used are similar to that of the top of the iceberg that is above water. It is what is most easily visible, but other aspects of stewardship, like the part of the iceberg that is beneath the surface is not as visible. However, it is a much larger part.

What producers and veterinarians do to prevent the use of antimicrobials represents the majority of the bottom of the iceberg. Those measures include what producers are doing to prepare their facilities before the animals are born, how manure is managed, the cleaning and disinfection of facilities, the cleanliness and purity of the water supply and lines, the ventilation of barns and the farm's vaccine program.

"Under the surface is where the majority of the

good stuff is," she said. "We don't really have established metrics to show all of that."

### Communicating stewardship practices

Most of Kromm's career has been centered around the turkey industry. Prior to founding Food Forward in 2021, she worked for nearly 10 years for Hormel Foods subsidiary Jennie-O Turkey Store, where she spent the final three years there as the vice president of animal health and welfare.

It was during that time when she found herself in conversations with various stakeholders in the food community that she realized the need for the greater agriculture community to redefine antimicrobial stewardship.

## WHY ANTIMICROBIAL STEWARDSHIP NEEDS A NEW DEFINITION

And part of the challenge is that perhaps agriculture has “struggled to have a big enough voice” in the greater One Health conversations about antimicrobials. Those not directly involved in agrifood production often fail to see that bigger picture.

When people are not on a turkey farm every day, she said as an example, they do not easily relate on the decisions producers and veterinarians need to make when birds in the flock get sick, and what is the best way to treat them.

But when they understand everything producers do to prevent those birds from getting sick, they realize that even if antimicrobials are used when they do become ill, stewardship practices are still used.

### Stewardship varies by species

Often the turkey industry is unfairly compared to the broiler industry, which she said sets “the gold standard” for the present definition of antimicrobial stewardship.

A much larger percentage of the U.S. broiler flock is raised in a no antibiotics ever (NAE) system, so some might think that the turkey industry is not practicing stewardship as well as the broiler industry.

“From a turkey perspective, it’s very difficult when you’re doing some initial engagement with the folks that maybe have a slightly better understanding of how chickens are raised than they do turkeys,” she said. “In general, they’re coming into the conversation with the expectation that it can’t be that hard to raise NAE turkey.”

“It’s challenging because the dogma is that we have the numbers, and we feel like we have to defend our numbers.”

One of the bigger challenges that the turkey industry faces that contributes to a comparative higher level of antimicrobial use is there are fewer preventive medicines on the market for them. That, in turn, gives the turkey industry fewer alternatives for antibiotics.

She does not fault the animal health companies for not putting more emphasis on turkey vaccines, though, because she understands that the broiler industry is much

larger, and it makes more economic sense to develop and market chicken vaccines and medicines.

Governmental approval processes for vaccines are also a factor.

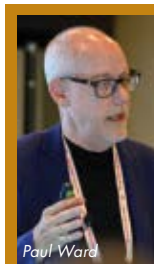
Avian metapneumovirus is an example of a lack of vaccines as it has recently been affecting turkey flocks across the northern U.S. and Canada. A vaccine for that disease is widely available in Europe, but that has not been the case in the U.S., she said.

And in instances such as the present avian metapneumovirus outbreak, which was not as problematic in prior years, an agrifood company or farm might actually use more antibiotics than the prior year, giving some people the impression that their antimicrobial stewardship under the old definition is faltering, when in reality, it likely is not, she said.

### Antibiotic use does not equal lower welfare

Another benefit to bringing preventive measures into the definition of antimicrobial stewardship is that when people gain that knowledge, they are less apt to jump to the conclusion that animals raised without antibiotics are better cared for than those that are judiciously treated with antibiotics.

“There’s a perception that NAE turkeys had a better life, and I think if we are able to better communicate and educate, and broaden our understanding around antimicrobial stewardship, it levels the playing field to some degree where turkeys and chickens, regardless of what package they end up in, live very similar and good lives,” Kromm said. “Some might end up getting sick and require therapeutic treatment, but in general for 80-90% of them, their lives are lived exactly the same,” she said. ■



**Balance needed in poultry and egg’s antibiotic usage**  
[www.WATTAgNet.com/15681773](http://www.WATTAgNet.com/15681773)

# READY TO CRACK OPEN NEW INNOVATIONS FOR YOUR BUSINESS?



Break open the latest advancements in the production and processing of poultry and eggs and discover thousands of innovations for your business directed at bird health, housing, logistics, packaging and more at the 2025 IPPE.

**MAKE PLANS TO JOIN US.  
REGISTER NOW AT [IPPEEXPO.ORG](https://ippeexpo.org)**

**Jan. 28 – 30, 2025  
Atlanta, GA USA**







## Retention problems facing poultry processors

Programs like childcare and professional development can help attract and retain a quality workforce.

EMMA COTTRELL

Going beyond traditional benefits and implementing innovative solutions will help poultry processors address retention challenges and align with the needs of today's workforce.

As of July 2024, the U.S. has 8.2 million job openings but only 7.2 million unemployed workers, according to the U.S. Chamber of Commerce — a discrepancy of 1 million workers as the market is still recovering from the COVID-19 pandemic.

To combat this shortage, employers in the poultry industry

**The priorities of the American workforce are shifting, and employers will need to understand and cater to those priorities so as not to lose out on good talent.**

*Maksymenko Nataliia | iStock.com*

“Companies must treat worker candidates like potential customers,” said Matt Spencer, vice president, HR & Safety Programs, U.S. Poultry & Egg Association, and “focus their efforts on what drives a candidate to invest their career in their brand and how they can sell the company to the future workforce of tomorrow.”

### Know what your workforce needs

With younger generations coming into the workforce, the priorities of American workers are shifting, and employers will need to understand and cater to those priorities so as not to lose out on good talent.

For example, according to the Center for American Progress, over half of Americans live in a childcare desert — a region where the amount of quality, affordable childcare falls short of the demand. A parent’s access, or lack thereof, to childcare will impact their ability to obtain and keep a job.

“The lack of conveniently located and affordable childcare is one of the leading reasons for employment resignations in our industry,” said Spencer. “The cost of childcare in some regions of the country has been noted to exceed the cost of monthly rental and mortgage expenses.”

Childcare Aware of America found that the average cost of childcare in the U.S. in 2023 was \$11,582 — 10% of a married couple’s median income and 32% of a single parents.

And childcare deserts are more common in rural areas — the same place that most poultry jobs are located.

If a processor finds that it is struggling with recruitment and retention due to a lack of childcare, Spencer suggested that companies can invest in or partner with local childcare providers, after-school programs and other community organizations to make sure that the available childcare can meet the needs of the workforce.

Or, if they have the resources, processors could take it a step further and build their own childcare facilities for employees.

West Liberty Foods, for instance, opened a childcare center at its Utah facility in 2008 — Hearts & Hands



**Matt Spencer, vice president,  
HR & Safety Programs, U.S.  
Poultry & Egg Association**

*Courtesy U.S. Poultry & Egg Association*

will need to step up their game to compete in the job market and attract and keep qualified workers.

## RETENTION PROBLEMS FACING POULTRY PROCESSORS

Children's Academy — after noting that the location had no licensed daycare options.

Tara Lindsay, chief talent & culture officer, West Liberty, called the center a “competitive advantage” and that the company has seen greater retention in those involved with the center. “It is a tough decision for families to make a job change when they factor in the benefits of the center to their children and the potential loss of this benefit when they leave employment.”

West Liberty also offers preschool, transportation to and from school, and summer camps.

Other challenges fueling high turnover include attending school, health problems and transportation issues, Spencer adds, which “the industry has taken proactive measures to address.” These include flexible work schedules, providing



**Tara Lindsay, chief talent & culture officer, West Liberty Foods**

*Courtesy West Liberty Foods*



**West Liberty Foods' childcare center, the Hearts & Hands Children's Academy.** *Courtesy West Liberty Foods*

tuition support, offering transportation for employees and setting up local healthcare clinics.

### Engagement, professional development and bridging the age gap

Communicating and engaging with workers can be the best way for employers to learn how to increase retention.

According to Spencer, “employees want to know that their organization has their best interests at heart. They also want to know that the organization is open to providing a productive and collaborative environment where workers are seen and heard.”

One way that employers

can cultivate this productive environment is by investing in employees' training and professional development.

Todd Gilliam, North American industry leader, Food & Beverage, Rockwell Automation, emphasized the importance of long-time, experienced employees training new ones to preserve expert knowledge while simultaneously giving a new hire the tools and confidence to do their job.

This is especially important as 10,000 baby boomers are reaching retirement age every day, according to Spencer, so bridging the gap between older and younger employees right now is vital.

“We're seeing new workers





**Todd Gilliam, North American industry leader, Food & Beverage, Rockwell Automation**

*Courtesy Rockwell Automation*

who are now being trained by mentors that are only a few months ahead of them in experience,” said Gilliam. “Previously, that onboarding would have been done by someone with many years of experiences to share.”

Spencer also highlighted the industry’s use of mentorship programs, which provide just as many benefits to the industry as they do the mentees. These programs show employees that companies care about their professional growth, encouraging them to stay in the poultry sector and apply what they learn

to help the sector grow. As a company, sharing your values can also increase retention of younger employees as, according to a Deloitte Insights 2020 Global Marketing Trends Report, purpose-oriented companies saw 40% higher retention compared to competitors.

### **New technology attracts new talent**

“The feedback and statistics have clearly shown that ‘plant jobs’ have become less attractive with younger generations and early-career resources in the workforce, as they are perceived to be in ‘dirty’ or ‘messy’ or even unsafe environments,” said Gilliam, “and as we know, some poultry processing roles are worse than others in that regard.”

But new technology can help with that.

Augmented or virtual reality training formats can better prepare employees for the work they will be doing by using instructional videos or even overlaying images and

instructions onto physical equipment using a tablet, phone or a wearable headset.

Employees can more easily replicate a task that is shown in an image or video, according to Gilliam, especially if there is a language barrier where written

## **COMMUNICATING AND ENGAGING WITH WORKERS can be the best way for employers to learn how to increase retention.**

and spoken instructions may not be as effective.

This kind of technology can be more engaging, and “engaged workers stick around,” said Gilliam. “Many of our clients are starting to come around to the idea of competing in a tough labor market and how to stand out as a more exciting labor destination.” ■



### **3 employee retention challenges in the poultry industry**

[www.WATTAgNet.com/15676530](http://www.WATTAgNet.com/15676530)

*Michaeljayberlin | Dreamstime.com*



# Breast meat quality disorders in modern broilers

Understanding the interplay between nutrition and certain disorders is essential to elevate breast meat quality and meet consumer expectations.

IOANNIS MAVROMICHALIS

In modern poultry production, the quest for superior breast meat quality in broilers is challenged by various disorders that compromise the desired standards.

While disorders such as white striping syndrome (WSS), wooden breast syndrome (WBS) and green muscle disease (GMD) pose significant hurdles, nutrition can certainly play a role in mitigating these problems.

Understanding the interplay between nutrition and these disorders is essential for poultry producers aiming to elevate breast meat quality and meet consumer expectations.

**White striping syndrome (WSS):** Nutrition plays a pivotal role in managing WSS, with specific dietary interventions offering promising avenues for mitigation.

High-energy diets rich in carbohydrates, particularly corn-based diets, have been linked

to increased incidence and severity of WSS. To counteract this, formulating diets with reduced energy concentration and rebalanced amino acid profiles, particularly lysine, methionine, and cysteine, can help alleviate the metabolic imbalances associated with WSS.

Additionally, supplementing diets with antioxidants, including but not limited to vitamin E and selenium, can mitigate oxidative stress, and reduce the severity of WSS lesions.

## **Wooden breast syndrome (WBS):**

Nutritional strategies aimed at mitigating WBS focus on modulating inflammation, oxidative stress and muscle metabolism. Including anti-inflammatory nutrients such as omega-3 fatty acids, found in fish oil or linseed, can help attenuate the inflammatory response associated with WBS development.

Antioxidants such as vitamin C and various

polyphenols from plant extracts possess anti-inflammatory and antioxidant properties, offering potential benefits in reducing fibrosis and improving meat texture in broilers affected by WBS. Optimizing dietary calcium and phosphorus levels to maintain skeletal health and prevent secondary metabolic disturbances can contribute to reducing the incidence of WBS.

**Green muscle disease (GMD):** While nutrition's direct impact on GMD is less understood compared with WSS and WBS, certain dietary factors that can influence muscle metabolism and oxidative stress may also potentially affect GMD severity.

Providing diets enriched with antioxidants, such as vitamins E and C, selenium and plant-derived polyphenols can mitigate oxidative stress and reduce muscle damage associated with GMD. Additionally, ensuring optimal levels of essential nutrients involved in muscle function, such as vitamin D, selenium and magnesium, can support overall muscle health and resilience against oxidative damage.

### The potential role of gamma-aminobutyric acid (GABA)

The additive gamma-aminobutyric acid (GABA) may offer potential benefits in mitigating some of the disorders affecting breast meat quality in modern broilers, particularly WBS.

GABA is a nonprotein amino acid that serves as an inhibitory neurotransmitter in the central nervous system of animals, including poultry. While research on the specific effects of GABA supplementation in broilers is limited, its role in reducing stress, modulating inflammation and improving muscle metabolism suggests potential benefits in managing WBS and related disorders.

### GABA is believed to work as follows:

**Stress reduction:** Stress is a significant contributing factor to the development of WBS and other meat quality disorders in broilers. GABA functions as a neurotransmitter that helps regulate stress

responses in animals. By acting on GABA receptors in the brain, supplemental GABA may have anxiolytic (anti-anxiety) effects, thereby reducing stress levels in broilers. Lower stress levels can contribute to improved muscle health and reduce the incidence or severity of WBS lesions.

**Anti-inflammatory effects:** Inflammation plays a crucial role in the pathogenesis of muscle disorders, leading to fibrosis and impaired muscle function. GABA receptors are also present on

## NUTRITION EMERGES AS A POTENT TOOL in mitigating disorders affecting breast meat quality in modern broilers.

immune cells, and GABA signaling pathways can modulate inflammatory responses. Therefore, GABA supplementation may exert anti-inflammatory effects in broilers, potentially reducing the inflammation associated with WBS development and improving overall muscle quality.

**Muscle metabolism regulation:** GABA signaling pathways can influence muscle metabolism and contractile function. GABA receptors are present on skeletal muscle cells, where they participate in neuromuscular transmission and muscle relaxation. Supplemental GABA may regulate muscle metabolism and improve muscle fiber integrity, thereby mitigating the pathological changes associated with breast meat quality.

While the potential benefits of GABA supplementation in managing WBS and related disorders are promising, further research is needed to elucidate its precise mechanisms of action and



The need for woody breast detection  
in poultry processing  
[www.WATTAgNet.com/15676285](http://www.WATTAgNet.com/15676285)

# INGREDIENT INNOVATION: Your Path to Growth

**APRIL 28-30, 2025** • Kansas City, Missouri



## ATTEND to:

- **MAKE CONNECTIONS** with ingredient buyers
- **STAY ON TOP** of the fast-moving pet food market and industry changes
- **HEAR THE LATEST** on ingredients, nutrition, processing and more
- **DISCOVER** new technology and innovations

**PETFOOD  
FORUM**

Presented By: **PETFOODINDUSTRY®**

»» REGISTER for super early bird savings at: [PetfoodForumEvents.com](https://PetfoodForumEvents.com)



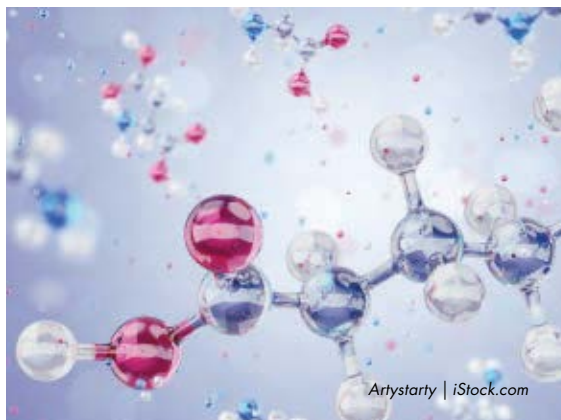
## BREAST MEAT QUALITY DISORDERS IN MODERN BROILERS

determine optimal dosages and application methods for broiler production.

Integrating GABA supplementation with comprehensive management practices, including genetic selection, nutrition optimization and stress reduction strategies, may maximize its efficacy in improving breast meat quality and maintaining the competitiveness of poultry production.

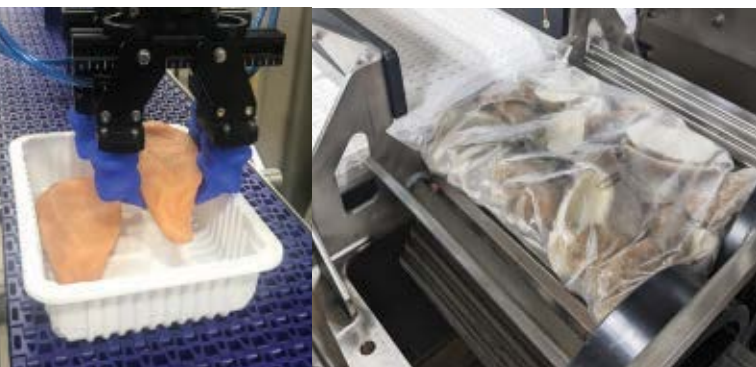
In conclusion, nutrition emerges as a potent tool in mitigating disorders affecting breast meat quality in modern broilers. By formulating diets tailored to address the metabolic imbalances, inflammation and oxidative stress associated with disorders such as white striping syndrome, wooden breast syndrome and green muscle disease, producers can enhance meat quality and meet consumer demands effectively.

Adopting a holistic approach that integrates genetic selection, management practices and



nutritional optimization is essential for achieving consistent excellence in breast meat quality and sustaining competitiveness in the poultry market. ■

*Ioannis Mavromichalis, Ph.D., is an animal nutrition industry consultant. He may be contacted at [imavromichalis@icloud.com](mailto:imavromichalis@icloud.com).*



**Our Solution Is Always the Perfect Fit Because It's Built for You.**



**Scan For Video**

You make it. We pack it. End of line packaging solutions for the poultry, beef and seafood industries including protein patty stacking, raw product tray loading and case packing of IQF chicken and other proteins.

- Case and Tray Packing
- Vision Guided Robotics
- Turnkey Packaging Systems

# Positioning chicken to win with the consumer of 2035

With Generation Z becoming the primary protein purchasers within the next decade, producers should be adapting their products now.

MEREDITH DAWSON



Gen Z said it values spending time with family and friends and uses food to facilitate in-person interactions and social experiences. *dolgachov | BigStock.com*



Chicken is the protein with the most demand growth in every age group; however, it is the younger generations — millennials and Generation Z — driving change in protein consumption, explained Circana Protein Practice Principal Erkin Peksoz at the 2024 Chicken Marketing Summit.

“The year 2030 marks a turning point for the U.S. population. Half of all Americans will be

millennials, Gen Z or younger. These shoppers have lived in a world with the internet, online shopping, smart phones and supercenters that sell fresh groceries. They are multicultural, diverse and much more open to new solutions,” Peksoz said.

Additionally, the two age groups are expected to increase their income more than older generations over the next 10 years, making their poultry shopping preferences more important than ever.



## POSITIONING CHICKEN TO WIN WITH THE CONSUMER OF 2035

To learn more about the consumer of 2035 and better understand how younger generations shop for their poultry products, a custom online survey was conducted between June 28 and July 6, 2024. Approximately 620 fresh chicken buyers between the ages of 18-67 participated in the survey. The data collection was sponsored by Elanco, Evonik and the National Chicken Council.

### Gen Z's poultry shopping behaviors

According to the survey, the age group wants products that are simple, authentic and transparent, while also being convenient, explained Joyce Neth, WATT Global Media vice president of audience engagement.

Quick preparation time is a critical and unmet need for many fresh chicken consumers that will

to trusted brands that give consumers a nostalgic feeling. Gen Z also said it values spending time with family and friends and uses food to facilitate in-person interactions and social experiences. This involves exploring global flavors or international foods with other people as a bonding experience.

Sustainability is one of the more important priorities for Gen Z, as 70% of the age group considers sustainability when making a purchase and says they are willing to pay more for sustainable products, explained Neth.

“They say they are willing to pay a premium, but there is a gap between what consumers say and what they will do,” she stated. “These are folks who have economic pressures. They want to do the right thing. They want to say they do the right thing. But wallets can’t always accommodate that.”

Gen Z places value on health and wellness, or self-care and improving their mental health, too. This behavior drives a preference for organic food and extends to the “treat yourself” mindset that involves consuming comfort foods and indulging.

### Packaging, sustainability should be a focus

According to the survey, a significant amount of the Gen Z and millennial populations are beginning to prioritize packaging with “no mess” features, as well as packaging with a QR code to obtain more information on preparation, recipes or nutrition facts.

Additionally, it will be important for companies to offer sustainable, recyclable, compostable and reusable packaging options, as concerns about environmental impact drive consumer demand.

Packaging will be especially important, as online channels are expected to be a growth driver for fresh poultry meat purchases and 45% of consumers across all ages have purchased fresh meat products online in the last six months.

Concerning online purchases, Neth said, it is important to reassure product safety to consumers



Joyce Neth and Erkin Peksoz presenting at the 2024 Chicken Marketing Summit *Paul Ward*

help satisfy their work-life balance, and that Gen Z says they will prioritize, she added.

According to the data, a significant amount of the Gen Z population will prioritize convenient meal prep options that take 30 minutes or fewer over the next five years. However, the survey showed that convenience in meal prep is welcomed by all generations.

“This presents a real opportunity to give them those time-saving solutions,” Neth stated.

A stable and consistent product showed to also be a priority for Gen Z, as well as commitment



to encourage online purchasing among nonbuyers. “Safe and affordable transport is a key concern to alleviate. This means that the product stays cold during delivery,” she stated.

Neth continued, younger consumers are particularly interested in practices related to sustainability, social causes and transparency.

According to the survey, 76% of consumers say that corporate responsibility matters when making

## According to Peksoz, THE FUTURE CONSUMER WILL DEMAND ARTIFICIAL INTELLIGENCE in their shopping and cooking experiences to support busy lifestyles.

purchasing decisions for food, with consumers placing the most value on companies supporting local communities, demonstrating animal welfare commitments, using recyclable packaging and demonstrating employee welfare. Neth explained that consumers mainly learn about these initiatives through online sources such as Google, product packaging, word of mouth and social media.

“Consumers want to see that people are doing good things, and they want to support those good things,” Neth stated.

### Technology will drive poultry demand

According to Peksoz, the future consumer will demand artificial intelligence in their shopping and cooking experiences to support busy lifestyles.

This will include the interactive ability to order ingredients through a recipe or pictures, step-by-step cooking instructions or new recipe or restaurant

recommendations related to past internet searches.

Additionally, Peksoz and Neth believe that artificial reality in the grocery store will drive demand for poultry, such as product promotions or recommendations projected directly on the item or shelf. Virtual reality shopping at home will also grow over the next decade to increase convenience. For example, this includes giving consumers the option to shop replicas of the grocery store without leaving home.

### Winning the consumer of 2035

To successfully market to the chicken consumer of 2035, Neth and Peksoz recommend that producers tell their sustainability story in a way that offers transparency and supports its claims with meaningful and measurable actions.

“Make your products the right choice. Why is this the perfect product? Tell them why,” added Neth.

Additionally, chicken companies should produce products that make meal prep easy for one or multiple people. Use packaging as a billboard and tell the consumer what they need to know such as, “Ready in 10 minutes using an air fryer” or offer a QR code, explained Peksoz.

While many are familiar with poultry’s health benefits, producers should leverage the protein’s taste, health status and versatility as a comfort food, and communicate that to the consumer.

Producers can also leverage the protein as a shareable experience. “Food brings us together. People want to be together. They will come together over food, metaphorically with global flavors or physically with social eating.” ■



Paul Ward

# Holistic water management benefits Alabama processor

John Soules Foods named Clean Water Award winner in the pretreatment category.

JOHN PIERSON

**F**or its commitment to clean water, the John Soules Foods plant in Valley, Alabama, was selected as the winner of the 2024 U.S. Poultry & Egg Association's Clean Water Award in the pretreatment category.

Facilities eligible for the pretreatment category are those that discharge pretreated effluent to a publicly owned, full treatment facility for further treatment. Qualified facilities must have at least two years in which no significant noncompliances or notices of

violations have occurred.

Judging is based upon a variety of factors including training, unique processes utilized for treatment, community outreach, wildlife management, water conservation and general environmental stewardship.

## Setting a high standard

The John Soules Foods production facility treats approximately 420,000 gallons of wastewater daily. Its planned future capacity is for 1 million gallons per day.

The plant efficiently controls its wastewater treatment using a patented advanced pretreatment system that couples its operations with the facility operations. The operator has the unique ability to run the system automatically or make changes virtually off-site or manually on-site.

## Welcome growth, improve constantly

Eric McClanahan, the environmental manager at the Valley plant, said that the





company opened its state-of-the-art production facility in 2021 to continue to support its growing business.

He noted that, typically, added treatment is needed to achieve the discharge permit effluent water quality standards for similar fully cooked production facilities. However, capital investments in screening, dewatering and a containment area for the recycling and disposal of non-edible material were made that enhance the capabilities of the wastewater control system. These strategic decisions have thus delayed the need for added biological treatment equipment.

### Set high standards

Treatment yields a 52% reduction in biochemical oxygen demand (BOD), a 40% reduction in total Kjeldahl nitrogen (TKN) and a 70% reduction in phosphorus.

These reductions provide thousands of dollars monthly in savings for surcharges.

In addition to these savings, John Soules Foods has reduced its landfill footprint by approximately 250 tons monthly which translates into a cost

benefit for John Soules Foods and a huge environmental benefit for the surrounding community by this product not entering the local landfill.

### Make a difference

John Soules Foods makes



**View of the screening, dewatering and containment area upgrades at the John Soules Foods processing plant in Valley, Alabama.** *Courtesy John Soules Foods*

kubais / AdobeStock.com



@arian\_pajouh



www.arianpajouh.com

شرکت آرین پژوه



## HOLISTIC WATER MANAGEMENT BENEFITS ALABAMA PROCESSOR

a difference, and its employees answer the call not only at work but also in the local community.

The company donates to the Valley Haven School, which provides education and training, special instruction, and other services for intellectually disabled and/or developmentally delayed individuals, preschool to adult, who are not receiving these training services from any other local sources.

It also supports the Chattahoochee Humane Society. Beyond finding homes for

pets and providing shelter to unwanted, or lost animals in Chambers County, Alabama, the Humane Society provides programs designed to prevent overpopulation, animal cruelty, and also encourage responsible pet ownership through education and spay/neuter financial assistance.

John Soules Foods and its employees also work to bring out the best in each other and the local community through donations to local schools, blood drives, the Alabama Sheriffs

Youth Ranches golf tournament for at-risk youths and the City of Valley Christmas merry-go-round, an annual tradition that is free to the public and is the highlight of the season.

### Answering the call

The John Soules Foods recipe for clean water success includes water conservation.

Water condensation from its vapor power steam generators is cooled and then sent to the maximizers for high pressure water that is used plantwide for cleaning inside and out.

The facility started a water conservation campaign inside the plant to reduce water usage during production operations, and production team employees are continually educated regarding the cost and impact of wasting water during production. By the end of 2023, John Soules Foods captured, on average, 70,000 gal/day.

### Take initiative

Adam White, the director of maintenance, says the overall success of their maintenance program is the commitment to a holistic approach toward environmental stewardship.

Beyond efficient management of the facility's heating and cooling systems coupled with wastewater treatment, John Soules Foods uses state-of-the-art



## ANIMAL FOOD INDUSTRY SUSTAINABILITY TOOLKIT

## SUSTAINABILITY MADE SIMPLE

IFEEDER's **new resource** explores the value of key sustainability issues for the animal food industry, helping companies define and identify where to focus their efforts with real-world examples.



Learn more at [ifeeder.org/materialissues](https://ifeeder.org/materialissues)

robotics for its production lines. White notes that the local Southern Union State Community College mechatronics program and their graduates have not only helped keep production going, they make John Soules Foods and Valley, Alabama, a great place to work and live, respectively.

John Soules Foods' values state, "When we lead with heart, we further relationships, our goals, our business as a whole." And in Valley, Alabama, clean water is at the heart of the matter. ■

*John Pierson is principal research engineer at the Agricultural Technology Research Program*

*at the Georgia Tech Research Institute. Contact at john.pierson@gtri.gatech.edu.*



Paul Ward

**Areas of focus to improve poultry sustainability by 2035**

[www.WATTAgNet.com/15682454](http://www.WATTAgNet.com/15682454)

**Hubbard**  
YOUR CHOICE, OUR COMMITMENT



HUBBARD CONVENTIONAL  
*the efficient choice!*

**EFFICIENCY PLUS**



**THE STANDARD FOR EFFICIENCY**



Get more information!



**Jan. 28-30, 2025**  
**Atlanta - USA**

**Booth # B4033**

[www.hubbardbreeders.com](http://www.hubbardbreeders.com)



## 6 must-attend education programs at 2025 IPPE

IPPE's education programs will focus on industry trends, food safety, plant operations, sustainability and many more current topics.

ANDREA GANTZ



**A**s the only annual exposition highlighting the best of the poultry and egg, meat and animal food industries, the 2025 International Production & Processing Expo (IPPE) offers timely and critical information as well as the latest innovations and solutions, providing producers and processors an efficient way to find solutions to enhance their operations.

Scheduled for Jan. 28-30 at the Georgia World Congress Center in Atlanta, IPPE will feature education programs focused on the most current industry issues, trends, food safety, plant operations and sustainability. Here are six you won't want to miss.

### WHEN AND WHERE 2025 International Production & Processing Expo

January 28-30, 2025  
Georgia World Congress Center  
Atlanta, Georgia  
<https://www.ippexpo.org/>



Phil Skinner



## Automation & Artificial Intelligence Workshop

Tuesday, Jan. 28, 8-11 a.m.

Registration Fee: \$299

Learn from leading industry and academic experts about how artificial intelligence (AI) and automation drive transformational change in efficiency, safety, animal welfare and environmental goals in the meat and poultry industries. This workshop will set the stage for your experience on the IPPE show floor and provide new perspectives on how you can incorporate AI and automation in your business.

## Feed Mill of the Future Conference: How innovation and sustainability will shape the feed industry of tomorrow

Tuesday, Jan. 28, 8 a.m.-12 p.m.

Registration Fee: \$95 early bird/\$125 after Jan. 10

This half-day conference brings together leading feed industry experts to examine emerging feed industry trends and new technologies that will impact how animal feed is manufactured in the years ahead. Feed milling professionals will leave with a better understanding of how innovation and early adoption will help their business achieve its sustainability, productivity and profitability goals. The conference is organized and presented by Feed Strategy and Feed & Grain magazines.

## What's keeping the feed industry up at night?

Wednesday, Jan. 29, 10 a.m.-12 p.m.

Registration Fee: \$79 early bird/\$90 after Jan. 10

Join the American Feed Industry Association team for a critical discussion on the most pressing challenges facing the animal feed industry. This 2-hour symposium dives deep into three key areas that are keeping producers and industry experts awake at night: highly pathogenic avian influenza (HPAI) and its recent presence in dairy cows; the ongoing battle against African swine fever (ASF) and its Page 3 of 3 implication in feed production; and the ever-evolving

challenge of bridging the nutrient gap when animal genetics outpace published requirements.

## WMIN Workshop

Wednesday, Jan. 29, 9-10 a.m.

Registration Fee: FREE

This workshop will showcase the Women's Meat Industry Network's mission of achieving the powerful benefits of gender diversity that will help create opportunities and diverse perspectives shaping the meat and poultry industries. Everyone, male or female, is invited to join to learn more about WMIN and their efforts to make the meat industry thrive.

## Poultry Future: What's next for Salmonella control in broilers and turkeys?

Wednesday, Jan. 29, 8-9 a.m.

Registration: Free

The U.S. Department of Agriculture (USDA) Food Safety and Inspection Service (FSIS) proposed *Salmonella* Framework for Raw Poultry Products raises several questions and challenges for U.S. broiler and turkey producers. Join an expert panel who will share programs for *Salmonella* reduction that are proven in the field and will discuss areas where new solutions need to be developed.

## Poultry Market Intelligence Forum

Wednesday, Jan. 29, 9 a.m.-12 p.m.

Registration Fee: FREE

A leading industry economist and industry experts will provide insights on how the domestic and global economies are continuously improving performance and how regulatory issues impact the poultry and egg industries. They will identify challenges facing the industry and discuss how the U.S. and international poultry industries are positioned to move forward.

The 2025 IPPE will feature many more hours of immersive education programs. To see the full schedule, make sure to visit the IPPE website and watch out for the WATT IPPE Directory, available digitally in November and at the show. ■

## »»PRODUCT REVIEW

### NEOGEN RAMIK LIQUID BAIT



- Neogen's Ramik Liquid Bait is a diphacinone-based rodenticide targeting house mice, Norway rats, and roof rats, registered by the U.S. EPA.
  - Ideal for indoor agricultural buildings in the Southern U.S., Ramik Liquid Bait addresses rodent control where water is scarce.
  - Available in 20.16 oz squeeze-and-pour bottles, allowing accurate mixing for up to three gallons of diluted bait.
- <https://www.neogen.com/>

### DSM-FIRMENICH HIPHORUS

- dsm-firmenich's phytase, HiPhorius, is approved for use across all poultry, swine and fin fish species in the EU, enhancing animal nutrition.

- HiPhorius promotes more efficient phosphorous utilization and phytate degradation, reducing the need for inorganic phosphorus supplements and improving growth rates.
  - HiPhorius benefits poultry, swine and aquaculture by improving animal performance, lowering feed costs, and reducing environmental impact.
  - The product's formulation ensures enzyme activity in feed, supported by user-friendly digital tools for precise application.
- <https://www.dsm.com/anh/home.html>

### DENIOS CHEMSORB ACID NEUTRALIZER



- DENIOS-US' Chemsorb Acid Neutralizer absorbs and neutralizes acid spills up to three times faster using color change technology to confirm neutralization.
- Suitable for battery, muriatic, hydrochloric, sulfuric and phosphoric acids, Chemsorb Acid

Neutralizer is lightweight and designed for easy transportation and deployment.

- The product leaves a dry, residue-free surface after absorbing acids and is easy to sweep or shovel up, requiring no specialized equipment.
  - One 10-pound bag absorbs up to 2.5 gallons of fluid. The Chemsorb range includes formulations for general spills, caustic substances and fire retardance.
- <https://www.denios-us.com/>

### TOMAHAWK MANUFACTURING TD-26 VISION INSPECTION SYSTEM



- The Tomahawk Manufacturing TD-26 Vision Inspection System ensures 100% top to bottom product inspection, detecting various foreign materials.
- Utilizes deep learning, AI/machine learning, high-speed cameras and laser tech for precise detection.
- Designed to meet USDA, FDA and AMI hygienic standards, boosting food safety and quality assurance.

- Provides real-time quality analytics, replacing manual inspection with a user-friendly, multilanguage system.  
<https://tomahawkmg.com/>

## CVE NMAN GEL BARS



- CVE's NMAN improves chick hydration and nutrition year-round.
- NMAN bars are user-friendly; place 1-2 bars in transport boxes.
- Gel-based NMAN boosts feed intake and chick liveability at farms.

<https://www.cvear.com/>

## NUTREX NUTRASE P



- Nutrase P, as a potent 6-phytase enzyme, helps release phosphorus from phytate, resulting in better absorption of essential nutrients such as phosphorus, calcium and other minerals.
- Enhanced nutrient uptake allows poultry farms to utilize their feed more efficiently, reducing feed conversion costs and improving the sustainability of poultry production.

# PROTECT YOUR BRAND®



**Spartan's Food Production Sanitation Program** provides cleaners, sanitizers and sanitation tools, plus employee training and sanitation management software, to support your goals for a safe and clean production environment. **It's your Brand. Protect it.**

**Contact us today for a FREE Site Audit.**  
[spartanchemical.com/how-to-buy](http://spartanchemical.com/how-to-buy) • (800)-537-8990



©2024 Spartan Chemical Company, Inc. All Rights Reserved. "We Make Clean Simple" and "Protect Your Brand" are registered trademarks of Spartan Chemical Company, Inc.

## GREENLINK PACKAGING

Sustainably Made to Elevate  
Your Egg Brand



Aegis Egg Cartons : Double-sided CMYK+3 direct print



**GreenLink Corp.**

9650 Telstar Avenue, Ste A122  
El Monte, CA 91731

Cell: (310) 951-5216  
[GreenLinkPackaging.com](mailto:sales@greenlinkpackaging.com)  
[sales@greenlinkpackaging.com](mailto:sales@greenlinkpackaging.com)

## » PRODUCT REVIEW

■ Nutrase P reduces the amount of undigested phytate in manure. This has a positive impact on the environment by reducing phosphorus leaching into soil and water.

■ The enzyme has been thoroughly tested and found to be safe for both poultry and consumers.

<https://www.nutrex.eu/>

### KEMIN INDUSTRIES SCIORIAN

■ Kemin's sciORIAN is a cloud-based data management solution for renderers.

■ Real-time system monitoring, predictive analytics and



automated alerts.

■ Enhances efficiency, productivity and data-driven decision making in rendering operations.

■ Ensures carrier-grade security and data privacy for all customers.

<https://www.kemin.com/na/en-us/home>

### RENEWABLE LUBRICANTS BIO-FOOD GRADE EP GREASE



■ High-temperature biobased grease for food processing, offering thermal stability and load capacity.

**WATTPoultry®**  
.com

# WEBINAR SERIES

On-Demand Webinar

VIEW TODAY AT [www.wattagnet.com/industry-resources/webinars](http://www.wattagnet.com/industry-resources/webinars)

WEBINAR NOW AVAILABLE

## Sustainable animal feed ingredients and byproduct utilization

The animal feed industry is an important part of a circular economy. The use of non-traditional protein sources can reduce waste and lower the environmental impact of feed production. This webinar will explore sustainable sourcing for feed ingredients and byproduct utilization, explain how technology can enhance transparency and efficiency in circular feed production, and discuss the importance of collaboration between feed producers, farmers, and other stakeholders across the supply chain to achieve circularity. Featured speakers include Jerry Shurson, professor of animal science at the University of Minnesota, and Maye Walraven, U.S. general manager and impact chief officer at InnovaFeed.

### SPEAKERS:



**Jerry Shurson**  
Professor of animal science at the University of Minnesota



**Maye Walraven**  
U.S. general manager and impact chief officer, InnovaFeed

### WHAT YOU'LL LEARN:

- Learn how the use of non-traditional protein sources can minimize waste during ingredient sourcing and production.
- Find out ways feed formulations can reduce the environmental impact of feed.
- Discover how digital tools can enhance transparency and efficiency in circular feed production.
- Hear about real-world examples of how circular models have been implemented.

Check out what's new on the farm:



>> Search for **WATTPoultry**



■ NSF H1 certified; effective across wide temperatures with water, rust and oxidation resistance.

■ Contains broad-spectrum anti-microbial preservatives; meets standards for incidental food contact.

■ Supports sustainability goals; nontoxic, petroleum and zinc-free, allergen-free, kosher supervised.

<https://renewablelube.com/>

## EW NUTRITION AXXESS XY

■ Axxess XY is an intrinsically thermostable xylanase that breaks down soluble and insoluble fibers in feed ingredients, releasing trapped nutrients and improving gut health.

■ The product offers flexibility in feed formulation and significant cost savings for feed producers.

■ Axxess XY's advanced technology positions EW Nutrition

as a key player in the enzyme market.

<https://ew-nutrition.com/us/>

## SOUTHWORTH PRODUCTS CORP ZLS-T FLOOR HEIGHT TILTER

■ Combines lifter and tilter for easy access to items in containers, totes or gaylords.

■ Platform flush with the floor for loading/unloading with a hand pallet truck, ideal for nonforklift areas.

■ Independent lift and tilt controls for ergonomic positioning, adjustable up to 30° tilt and 33½" height.

■ Options include safety features, custom sizes and corrosion-resistant finishes; capacities of 2,000 or 4,000 lbs.

<https://southworthproducts.com/en/>

Statement of Ownership, Management, and Circulation (Requester Publications Only)			
1. Publication Title	2. Issue Frequency	3. Issue Date	4. Issue Period
Watt Poultry USA	1 5 2 8 - 1 6 7 7	September 30, 2024	September 30, 2024
5. Issue Frequency	6. Number of Issues Published Annually	7. Annual Subscription Price	8. Annual Subscription Price
Bi-Monthly	6	\$198.00/yr USA Paid Rate	
9. Complete Mailing Address of Known Office of Publication (Street, city, county, state, and ZIP+4)		10. Complete Mailing Address of Headquarters or General Business Office of Publisher (Not Printer)	
Watt Global Media 401 East State Street, 3rd floor Rockford, IL 61104		Watt Global Media 401 East State Street, 3rd floor Rockford, IL 61104	
11. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor		12. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor	
Gregory Watt Watt Global Media 401 East State Street, 3rd floor Rockford, IL 61104		Elizabeth Doughman Watt Global Media 401 East State Street, 3rd floor Rockford, IL 61104	
13. Full Name and Complete Mailing Address of Publisher		14. Full Name and Complete Mailing Address of Publisher	
Gregory Watt Watt Global Media 401 East State Street, 3rd floor Rockford, IL 61104		Elizabeth Doughman Watt Global Media 401 East State Street, 3rd floor Rockford, IL 61104	
15. Publication Title			
Watt Poultry USA			
16. Issue Date for Circulation Data Below			
September/October 2024			
17. Extent and Nature of Circulation		18. Issue Date for Circulation Data Below	
Average No. Copies Each Issue During Preceding 12 Months		No. Copies of Single Issue Published Nearest to Filing Date	
a. Total Number of Copies (Net press run)		6,218	
b. Outside County Paid/Requested Paid Subscriptions (Net press run)		5,052	
c. Outside County Paid/Requested Paid Subscriptions (Net press run)		4,398	
d. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		776	
e. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		753	
f. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		213	
g. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		150	
h. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		988	
i. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		903	
j. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		6,048	
k. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		5,301	
l. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		178	
m. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		136	
n. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		6,218	
o. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		5,487	
p. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		84%	
q. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		83%	
r. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		4,261	
s. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		4,943	
t. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		9,303	
u. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		9,341	
v. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		10,291	
w. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		10,244	
x. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		90%	
y. Legitimate Paid and/or Requested Paid Subscriptions (Net press run)		91%	
19. I certify that 75% of all my distributed copies (single issues and serials) are regularly mailed or postage paid.			
20. Publication of Statement of Ownership for a Requester Publication is required and will be printed in the following issue of this publication.			
21. Signature and Title of Editor, Publisher, Business Manager, or Owner			
James E. Reed			
22. Signature and Title of Editor, Publisher, Business Manager, or Owner			
James E. Reed			
23. I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including damages).			
24. Publication Title			
Watt Poultry USA			



**Light trap doors mount flush to the interior wall and are hinged for easy access!**

**See it at  
IPPE!  
Booth  
B14043**



INTERNATIONAL  
**IPPE**  
PROTECTION & PROCESSING EXPO

**Light Trap  
Combination  
System**



**J&D  
Manufacturing**

[www.jdmfg.com](http://www.jdmfg.com)

**CONTACT YOUR LOCAL  
J&D SELLER TODAY!**

## » MARKET PLACE

Rates are \$330 per column inch (1x), \$295 (6x), or \$260 (12x). Ad production is included at no additional cost.

**HOW CAN YOU EASILY FIND CRUCIAL INFORMATION for the Global Poultry Industry?**

Subscribe now for the most trusted content, analysis and solutions to advance your business.

**STAY COMPETITIVE IN THE MARKET THROUGH:**  
Comprehensive articles | Expert insights | Exclusive research and data



**SIGN UP TODAY!**  
wattagnet.com/poultry-product-signup

**WATT Poultry**  
USA  
WATT Poultry.com

**WATT Poultry**  
USA

**WATT Poultry**  
International

## » AD INDEX

Agri-Food .....	45
Amcort Flexibles North America .....	C2
American Feed Industry Association .....	40
BluePrint Automation .....	33
Chore-Time .....	7
DPI Global .....	3
Hubbard LLC .....	41
J&D Manufacturing .....	47
MGK Insect Control .....	C4
Novus International Inc. ....	15
NPFDA .....	14
Spartan Chemical Co Inc .....	45
US Poultry & Egg Association .....	5, 25
Wm Goodyear Company .....	21

# WATT Poultry<sup>®</sup> USA

MARKETING AND SALES TEAM

Contact us at:  
www.wattglobalmedia.com/contact

## US SALES STAFF



**Chad Forster,**  
Sales Director - Agrifood



**Mary Harris,**  
USA Regional  
Sales Manager

## INTERNATIONAL SALES STAFF



**Tineke van Spanje,**  
Regional Sales Manager



**Dingding Li,**  
Regional Sales Manager

**SUBSCRIPTIONS:** Visit <https://www.WATTAgNet.com/product-portfolio> or contact Customer Service at +1.855.896.3491, +1.847.400.5960, or [wattpoultryusa@omeda.com](mailto:wattpoultryusa@omeda.com). Business and occupation information must accompany each subscription order. Single copy price US\$20 (plus postage) unless otherwise marked. Change of address: Provide both old and new address when requesting change of address.

© Copyright 2024 WATT Global Media. All rights reserved.

ELECTRONIC SERVICE REQUESTED

Volume 25, Number 7 **WATT PoultryUSA** (ISSN 1529-1677) is published 7 times per year (Jan/Feb, Mar/Apr, May/Jun, July Annual Buyer's Guide, July/Aug, Sep/Oct, Nov/Dec). by WATT Global Media, 401 East State Street, 3rd floor, Rockford, IL 61104 USA. All rights reserved. Reproduction in whole or in part without written permission from the publisher is strictly prohibited. WATT PoultryUSA and its logo are registered trademarks of WATT Global Media.

**POSTMASTER:** Send address changes to WATT Global Media, PO Box 468, Lincolnshire, IL 60069. Periodicals postage paid at Rockford, Illinois, USA and additional post offices.

# FEED MILL OF THE FUTURE CONFERENCE

How **efficiency**, **innovation** and **sustainability**  
will shape the feed industry of tomorrow



**REGISTER TODAY**

**January 28, 2025 | 8:00-12pm**

In partnership with AFIA at IPPE 2025  
Georgia World Congress Center

**Early Bird Registration**  
**AVAILABLE NOW!**

[Learn More](#)

**FEED MILL <sup>OF THE</sup>**  
**FUTURE**®  
**CONFERENCE**  
— **Feed**Strategy and **Feed&Grain** —





DARKLING BEETLE PORTFOLIO

# PLUMP UP YOUR BROILERS. KNOCK DOWN YOUR BEETLES.

Leverage MGK's portfolio of rotational products to control darkling beetles in your broiler facilities. Our products provide control throughout the grow-out; NyGuard IGR keeps darkling beetles in an immature stage and makes future product applications more effective.

To learn more, check out our darkling beetle pest control protocol:

[mgk.com/poultry](https://mgk.com/poultry)