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Fall 2020

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Social distancing measures will be in place



Kaitlyn McClary

"The TN Poultry Association provided me with multiple scholarships during my college career. These scholarships helped me financially reach my goal of graduating college. By receiving the scholarships, I was able to graduate a semester early. I cannot thank the TPA board and members enough!"

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Joseph Gulizia

"The TN Poultry Association scholarship program has allowed me to continue pursuing higher education degrees in poultry science. They have paved the way to not only my success, but many other students. Thank you to the TPA members and Board for continuous support of the agriculture community."



Scholarship Fundraiser Sponsors as of Sept 8, 2020



INSIDE THIS ISSUE

P 4-5: Spotlight on Tyson Shelbyville
P 7: Aviagen to invest \$100 mln in TN
P 8-9: Tyson expansions in West TN
P 10: Complex & Allied News
P 12-15: Covid-19 news
P 30: Propane Update
P 32-34: Line speeds

Are you zoomed out, too?

by TPA Executive Director Dale Barnett

By now everyone has either been directly or indirectly affected by the coronavirus. Our hearts go out to everyone who has faced serious hardships with respect to health and/or business setbacks. Some of the processing plants are still faced with workforce reductions due to employees (who are not sick or quarantined) simply not showing up, with no degree of predictability. This makes it even harder to meet production goals and to know how many chicks to place. Some growers, as a result, have received fewer birds and extended out times.

For those who have been impacted the greatest, hopefully relief funds were applied for and will be obtained. TPA notified everybody we could about the CAFB financial relief program through TDA that Gov. Lee designated. The application period was only for one week and everyone unfortunately may not have gotten notified or have the chance to apply. My heart goes out to one grower in particular that I am aware of who was in the hospital battling double pneumonia due to the virus during this time and was not able to apply, as an example.

For those of you who were looking forward to being with us in Nashville in August for what would have been our 66th Annual Meeting, we missed seeing you as well. We are still having our annual awards recognition programs and Tracy is working on a special edition newsletter that will come out later in October. Our scholarship fundraisers are still planned for Oct. 7-8th and we hope to be awarding at least 15 very deserving students for the spring semester. We hope to see everyone at one, if not both, of these two events!

TPA appreciates everyone's continued support and we hope you enjoy the special features in this issue. The poultry industry is certainly growing in TN. I know that I, for one, am happy to finally be having some face-to-face meetings, for like many others, I'm pretty much "zoomed out" as a result of all the virtual meetings and conference calls that have occurred over the past 6 months. □

P 42: Safety recognitions for TPA complexes
P 45: Commodity Report
P 48-49: The Complex World of Broiler Breeder Issues
P 50-53: Dealing with LED and dimmer issues
P 54-56: Common Air Inlet Problems
P 57-58: Allied Membership Directory
P 60-69: TAEP funding opportunity



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as of Sept. 9, 2020

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AUCTION ITEMS

Online auction October 7-8, 2020 via Handbid

- ◆ 2 Amish-made cedar/sassafras chairs & end tables— *The Vincit Group*
 - ◆ Custom made bench—*D&F Equipment Sales*
- ◆ 2 day deer hunt for 2—*Huvepharma & Suncoast Pine Shavings*
 - ◆ Traeger Pro 575 Pellet Smoker + \$300 Traeger gift card—*Farm Credit Mid-America*
 - ◆ Flint Oak Pheasant Hunt—*Aviagen*
 - ◆ YETI cooler & Bluetooth speaker—*Aviagen*
 - ◆ Golf putter and lead sled—*Aviagen*
 - ◆ Gun Enthusiast's package—*Sunbelt Rentals*
 - ◆ 40 quart Grizzly cooler—*Rabo AgriFinance*
 - ◆ YETI cooler—*Cobb-Vantress*
- ◆ Ring Alarm 8-piece kit (2nd gen) with Echo Dot—*Next Generation Films*
 - ◆ TBD—*River Valley Ingredients*
 - ◆ Other items TBD—*Cobb-Vantress*

****Some items will be displayed at the TPA scholarship fundraisers****

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Spotlight on Tyson Shelbyville

Shelbyville is a city located in Bedford County, TN, with a population of over 21,000 residents. The town is known as the Walking Horse Capitol of the World and recently hosted its 82nd Annual TN Walking Horse Celebration. Tyson Foods' Shelbyville Complex includes the processing plant and grow-out office in Shelbyville, a feed mill in Estill Springs, TN, and a hatchery in Decherd, TN. The complex is one of the largest employers in the county with approximately 1,300 Team Members and 90 contract growers.

The Shelbyville processing plant was originally built in 1959 by Dixie Home Foods. Tyson Foods acquired it from Acoma Foods in 1972. Shelbyville fresh tray pack products are produced for direct consumer consumption and sold through retail markets. As a top performing plant, Shelbyville has distinguished itself to exceed customer expectations in quality and service.

Estill Springs was selected as the location for the feed mill because of its central location between contract growers on the mountain side of southeast TN and the processing plant, along with its access to the CSX rail line.

The Decherd Hatchery is in a rural area, about 15 miles to the nearest town. The Hatchery has been a constant source of rural employment since 1978.

The Shelbyville Team is proud to support the community and contributes to various charities through in-kind donations and fundraising activities. Our partnership with Second Harvest Food Bank of Middle TN has help meet hunger needs within the community through the Mobile Pantry program. The Team has also provided disaster relief to communities affected by tornadoes. In addition, we support the Shooting Hunger event providing the meal for 500-600 people each year.



Andrew Blair, Complex Manager

Shelbyville's Complex manager, **Andrew Blair**, has been providing invaluable leadership within Tyson Foods for more than 26 years. Andrew is a North Carolina State alumni with a BS in Poultry Science. He has served at various locations within the Tyson Corporation before making a circle back to Shelbyville where he began his career in 1984. Andrew currently lives in Wartrace, TN with his wife Gail. "A lot of families depend on our business to succeed. It is an honor to work with our TEAM. Every day, our plant processes nearly 1.0 million pounds of breast meat, tenders, leg quarters, drumsticks, thighs, wings and whole birds, that oftentimes go straight to the neighborhood grocery store and I'm personally very proud of our TEAM."

"Being with Tyson Foods for almost 12 years, I have had the privilege of working at six different locations. I am originally from Kentucky and I always felt like I was the outsider of the area. But since becoming Complex HR manager here in Shelbyville almost 3 years ago, it doesn't feel that way and never did from day one. The people who work at this plant, from hourly Team Members to upper management, are close knit and it feels like you are working with family. Shelbyville is one of the most diverse plants that Tyson has, but you wouldn't know it by the way everyone interacts. Like any family, we have our ups and downs, but at the end of the day, we all know that it is the safety and wellbeing of our Team Members and the animals that we help grow that is the most important part of our jobs." — **Brent Osborne**



Brent Osborne, Complex HR Manager



Will Hightower, Plant Manager

"I have worked at Tyson for a little over 8 years. I started as an operations associate right after graduating from the University of Tennessee at Knoxville. I worked my way up to the plant manager position in 6 years and have currently been in the position just over 2 years. Our plant is a fresh tray pack plant and we are consistently the most profitable and highest performing tray pack plant in the company. We have a very diverse work force and a strong management team that is always looking for better ways to run our process." — **Will Hightower**

"I have been a part of the Tyson Shelbyville complex for 14 years. I started with Tyson by pulling blood for AI in broilers prior to slaughter and was in that job for 30 days. In May 2006, I became a broiler service technician and served in that position for 6 years and progressed to Broiler Manager. I served in that capacity until I received a promotion to my current position of Live Production Manager in December 2017. The Live Production TEAM in Shelbyville is very well rounded and I am certainly honored and humbled to be leading one of the top performing live production TEAMS within Tyson Foods. Our TEAM prides itself in mentoring and teaching young professionals in this business to becoming leaders and managers for the next generation. It's an honor to walk through the doors every morning and represent this complex in Live Production, and do it safely and productively." — **Marshall Miller**



Marshall Miller, Live Production Manager

continued on next page

Spotlight on Tyson Shelbyville (continued from previous page)



Shelbyville Plant – Shelbyville, TN



Feed Mill – Estill Springs, TN



Hatchery – Decherd, TN

(This is the third in a series of articles spotlighting our TPA poultry complex members. Over the next several newsletters, we plan to showcase each of our member complexes in random order.) □



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¹Barbosa T, Williams C, Villalobos T. Efficacy and Marek's disease protection comparison between different vaccination methods, in Proceedings, 18th Congress World Veterinary Poultry Association 2013;217.

²Avakian AP, Wakeland PS, Bryan T, Schaeffer JL, Williams CJ, Whitfill C. *In ovo* administration of Marek's disease vaccine: importance of vaccine deposition site in the fertile egg, in Proceedings, 51st Western Poultry Disease Conference 2002;119-121.

³Bruzual JJ, Padilla J, Campos R. Field trial conducted in Peru to evaluate the route of vaccine application against Marek's and infectious bursal disease (BURCELL-BVT) in broiler chickens - *in ovo* versus subcutaneous (translated into English), in Proceedings, ALA Bolivia 2003.

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zoetis

Aviagen Breaks Ground on New Tennessee Feed Processing Facility

Expansion in Tennessee signals growth, success for Aviagen North America and the customers they serve

July 20, 2020 – HUNTSVILLE, Ala. – Global poultry breeding company Aviagen® will break ground this month on a new state-of-the-art feed processing facility (feed mill) in Pikeville, Tenn. The new facility will supply the company's growing number of internal flocks with high-quality, pathogen-free feed. The \$35.3 million allocated to the feed mill is part of a larger \$100 million investment for the company in the communities of Pikeville and Crossville in southeastern Tennessee.



State-of-the-art feed mill with optimal biosecurity, quality

With the capacity to produce 2,400 tons per week (125,000 tons annually), the feed mill will supply more than 18 Aviagen pedigree and 46 Grandparent (GP) farms, as well as additional future operations. It leverages the latest technology available to achieve complete pathogen elimination and comprehensive biosecurity. With energy-efficient equipment and lighting, it is also engineered for the smallest-possible environmental footprint.



“Our foremost priority is the health and welfare of our birds, which begins with biosecure, high-quality feed,” explained Richard Obermeyer, Director of Feed Production. “The Pikeville facility joins our Sallisaw, Okla., and Athens, Ala., fleet of high-capacity, state-of-the-art feed processing facilities to keep our birds nourished with an adequate supply of nutritionally balanced feed.”

\$100 million investment to meet rising need

Crossville and the surrounding area is currently home to an Aviagen veterinary laboratory, hatchery, office, vehicle maintenance facility, and pedigree farms. The new Pikeville feed processing facility is included in a broader expansion that will double the company's current investment in the Pikeville and Crossville area.

(These communities are ~26 miles/42 kilometers apart). In addition to the Pikeville feed mill, the Pikeville/Crossville investment covers new GP production farms and the expansion of a Pikeville hatchery. The farms will produce eggs for Aviagen hatcheries, which will in turn fulfill a continually growing demand for Parent Stock chicks among the company's domestic and international customers.

The site for the new operations was chosen for its proximity to the company's existing production bases, as well as for its physical isolation, adding to the extensive biosecurity measures. Slated for completion in 2021, the new complex will eventually bring 260 new jobs to the area, including up to 36 positions at the feed mill. Another benefit to Tennessee agriculture is that grain supplying the feed processing facility will be purchased from local farmers; the company estimates the need for a million to a million and a half bushels in the first year alone.

“Our mission is to help our producers around the world feed their growing communities with a sustainable, affordable and readily available source of quality protein. Toward this goal, we continually upgrade and expand our facilities to keep up with an ever-increasing need,” commented Aviagen North America President Marc de Beer. “We're committed to the people of Tennessee, and are happy to expand our footprint there. It is a state with an impressive workforce, and one that understands agriculture – particularly primary breeding companies and the important role we play in the food supply chain.”

Pikeville Mayor Philip Cagle extended a warm welcome to the new Aviagen teams. “We're proud that Aviagen chose this area, bringing us much-needed jobs and also an opportunity for our local farmers to supply grain for the feed mill. Aviagen is a great asset for our community, benefiting Pikeville and the entire Sequatchie Valley.”

“We're grateful to Aviagen for selecting Bledsoe County as the location of this important strategic investment, which will prosper citizens throughout the county. As an agricultural community, we share Aviagen's commitment to provide a valuable food source for our local families and people around the world. We look forward to a long and mutually beneficial relationship for many years to come,” added Gregg Ridley, Bledsoe County Mayor. □

DATES TO REMEMBER

USPOULTRY LIVE PRODUCTION, WELFARE & BIOSECURITY SEMINAR

September 23-24, 2020

TPA SCHOLARSHIP FUNDRAISERS

Sporting Clays

October 7, 2020

Nashville Gun Club

Golf Tournament

October 8, 2020

Hermitage Golf Course

USPOULTRY POULTRY PROCESSOR WORKSHOP

October 7-8, 2020

TPA GROWER MEETINGS

CANCELED for 2020

Governor Lee, Commissioner Rolfe Announce Tyson Has Expanded Its Union City Operations

Thursday, July 30, 2020 | 10:00am

Tyson has invested \$87.6 million and is expected to create 230 additional jobs in Union City. Across Tennessee, Tyson's operations employ more than 5,500. This is Tyson's second expansion in Obion County since 2017.

NASHVILLE, Tenn. – Tennessee Gov. Bill Lee, Department of Economic and Community Development Commissioner Bob Rolfe and Tyson Foods, Inc. (NYSE: TSN) officials noted today that the food processing company has completed an expansion at its existing operations in Union City.

Tyson Foods, one of the world's largest food companies, has invested an additional \$87.6 million and is expected to create approximately 230 jobs by the end of 2020 as part of the expansion.

The company has added an additional 40,000 square feet and new production lines to the Union City plant. The expansion began earlier this year, but announcements and construction have experienced delays due to the global pandemic.

This is the company's second expansion in Union City since 2017, when it announced an \$80 million investment. Tyson employs more than 1,600 in Obion County. Its Union City complex supplies chicken for a national foodservice customer. Tyson also operates facilities in Goodlettsville, Newbern, Shelbyville and Humboldt, employing more than 5,500 in Tennessee.

Since 2015, TNECD has supported more than 50 economic development projects in Northwest Tennessee, totaling nearly 7,000 jobs and \$1.2 billion in private capital investment.

QUOTES

"For more than two decades, Tyson has been an important part of Obion County's economy, with its community impact stretching from the jobs Tyson creates to the local farmers supported by its operations. Tennessee's economic recovery begins with job creation, and I thank Tyson for its investment and commitment to Union City." – **Gov. Bill Lee**

"Tyson's investment is encouraging news for Tennessee. TNECD is focused on attracting the job creation needed to rebuild our economy, especially in rural communities like Union City. Bringing Tennessee's economy back will require strong partnerships between businesses and local communities, and TNECD is committed to supporting them every step of the way." – **TNECD Commissioner Bob Rolfe**

"Customer and consumer demand for protein continues to increase so we've invested almost \$200 million in recent years for projects that build on our strengths, expand our capabilities and increase our capacity. Expansions like this help position us to grow and support our customers, and we're glad we've been able to do them in Tennessee." – **Keith Riley, Manager of the Union City Tyson Foods complex** □

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Innovation Breeds Success

TPA Executive Director Dale Barnett visits new Tyson complex in Humboldt



Right: Complex Manager Tom McCue standing in his new office.

Bottom left: Humboldt's 100,000 sq. ft. hatchery (~2.5 acres under roof), featuring Pas Reform single phase equipment. Once the eggs are set, doors never have to be opened until they are ready to come out at day 19 for in ovo inoculations and to be moved to the hatching area.

Bottom middle: The new Tyson Humboldt complex will have 375,000 sq. ft. under roof. That's 8.6 acres! On the right is live haul receiving; on the far left is one of the areas where trucks will depart with product.

Bottom right: Humboldt's feed mill and grain storage facility. Each of the four large bins holds 700,000 bushels! Did you know that Tyson's feed mills and grain services operations purchase ~20% of TN's total corn crop across the state?



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NEWS FROM AROUND THE COMPLEXES

Adam Lanier is the new Broiler Manager at **Pilgrims Chattanooga**. He previously serviced broilers for Koch Food from 2008-2020 and also owned and operated his own broiler farm.

Tyson Foods, Inc. has announced that **Dean Banks** will succeed **Noel White** as Chief Executive Officer (CEO), while maintaining the role of President, effective October 3, 2020. White, who led Tyson through a period of unprecedented volatility and uncertainty when he assumed the CEO role in 2018, will remain with Tyson in a new role as Executive Vice Chairman of the board of directors. Tyson has named **Donnie King** president of its poultry business. King has more than 35 years of experience working in the poultry industry.

David Corvin is the new breeder manager for **Koch Foods Morristown**. He will be based out of Chattanooga.

ALLIED MEMBER NEWS

Jones-Hamilton Co. announces the promotion of **Blake Gibson** to the role of Division Manager for the Agricultural Division. Gibson joined the company in 1994 as the Agricultural division's founding employee, where he worked to introduce the poultry industry to PLT® - Poultry Litter Treatment one farm at a time. Gibson, who earned a Bachelor of Animal Science from Clemson University, has accepted roles of increasing responsibility within the Agricultural Division over his tenure, transitioning from National Accounts and Business Development Manager to Senior Manager Business Development and Marketing in 2019.



Jones-Hamilton Co. announces that **Connie Mou, Ph.D.** has joined the company as Manager, Technical Services. In her new role, Mou will be responsible for the support, development and implementation products in the Agricultural Division as well as the SWASH™ product line.

Elanco Animal Health Incorporated announced that the company has received unanimous approval from the U.S. Federal Trade Commission (FTC) for its acquisition of Bayer Animal Health, a division of Bayer AG. [Click here for full article](#)

BioSafe Systems' SaniDate® 5.0 is now labeled to kill the human coronavirus. SaniDate 5.0 is a disinfectant/sanitizer that kills the human coronavirus on hard, non-porous surfaces, making it a valuable resource for public health precautions.

Merck Animal Health, known as MSD Animal Health outside the United States and Canada, announced the completion of its acquisition of IdentiGEN, a leader in DNA-based animal traceability solutions for livestock and aquaculture from MML Growth Capital Partners Ireland. Specific terms of the agreement were not disclosed. IdentiGEN's technology combines each species' unique DNA (deoxyribonucleic acid) and data analytics to provide an evidence-based animal traceability solution, called DNA TraceBack®, to accurately and precisely trace beef, seafood, pork and poultry that is verifiable from farm-to-table. [Click here for full article](#)

The new Click Watering system, offering excellent food conversion results by providing the right amount of water with minimal effort, is now available from **Cumberland**.



UTIA recently recognized extraordinary service from members of the faculty and staff across the state at its annual awards and promotions event. **Shawn Hawkins**, associate professor in the Department of Biosystems Engineering and Soil Science, is the J.E. Moss Achievement Award winner for UT Extension. This award recognizes an outstanding recipient from each of UTIA's four units.

Be sure to check out the videos linked below from Shawn's presentations looking at the use of poultry litter and nutrient carryover for corn production, as presented at the Milan No-Till field day recently.



[Effective Use of Poultry Litter in Corn](#) [Corn Silage Nitrogen Agronomics and Mineral Nutrient Removal Rates](#)

□

NCC Releases New Safety Video in Response to Covid-19

This week, the National Chicken Council released a new video outlining how the chicken industry has enhanced safety measures in response to the COVID-19 pandemic. You can watch the video here: <https://www.youtube.com/watch?v=iKRX0FLY2-k&feature=youtu.be>

Using drone photography, viewers can see new perspectives from the inside of a processing plant and the essential workers who help keep grocery shelves and restaurants stocked with our nation's favorite protein: chicken.

The full video [and complementary blog](#) are available on the [Chicken Check In](#) website. We will be promoting this video heavily on social media and sharing it with the media, on Capitol Hill and with others. We encourage you to do the same! □

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Airborne Viruses Can Spread on Dust, Non-Respiratory Particles

August 19, 2020 in [FeedStuffs.com](#)

Influenza viruses can spread through the air on dust, fibers and other microscopic particles, according to new research from the University of California-Davis (UC-Davis) and the Icahn School of Medicine at Mt. Sinai in New York. The findings, which have implications for the transmission of several viruses besides influenza, were published Aug. 18 in Nature Communications.

[Click here for full article](#) □

Chicken antibodies help fight against COVID-19

June 22, 2020 in [WattAgNet.com](#) by Elizabeth Doughman

One egg can produce enough for 1,000 diagnostic tests.

[Antibodies produced in chicken eggs](#) could lead to a [better diagnostic test for COVID-19](#).

“We are using the immune system of the chicken to produce antibodies against the COVID-19 virus,” explained Bruce Rathgeber, Associate Poultry Professor at the [Atlantic Poultry Research Centre](#) on the Dalhousie Agricultural Campus, and [AffinityImmuno](#) president Jonathan Zuccolo.

“Our research is focused on determining if proteins from the surface spikes of the virus injected into chickens will produce antibodies that are useful for developing tests to screen for the presence of the virus.”

Why chickens are a good research model

Chickens are a [popular model for research involving the protein antigens of humans and other mammals](#). One chicken can produce an enormous amount of antibody, proteins that help fight off and prevent future infections, compared to rabbits or other animal models. They can also produce antibodies more cheaply and faster than other methods.

“In addition, chicken antibodies are harvested from the egg yolks, so we don’t have to collect blood like you would if you were using a mammal such as a rabbit or mouse,” Rathgeber and Zuccolo said.

“Typically, one egg can yield about half a milligram of specific antibody. For perspective, this is enough antibody to make about 1,000 virus tests. Harvesting from chicken eggs results in a very high purity antibody that can be used in a wide range of applications.”

Combatting COVID-19

Researchers at the Atlantic Poultry Research Centre on the Dalhousie Agricultural Campus will send the egg yolks of chickens injected with a synthetic COVID-19 spike protein created in China to AffinityImmuno Inc., a Canadian provider of R&D support services for biological drug discovery. Spike proteins are a [key component in helping the virus stick to human cells](#).

The injection is safe to the birds because it is only a virus protein, not the complete virus. In addition, research has [shown that chickens are not susceptible to COVID-19](#).

Scientists at AffinityImmuno will then extract antibodies from the egg yolks and evaluate their [use in a simple-to-use diagnostic test for the virus](#). The test could also be used to identify biomarkers that predict the chance of reinfection.

View our continuing coverage of the [coronavirus/COVID-19 pandemic](#). □

Cows Being Used to Produce COVID Vaccine

June 12, 2020 in [Drovers.com](#) by Anna-Lisa Laca

A biotechnology company in South Dakota is using cows to produce human antibodies to fight SARS-CoV-2.

[Click here for full article](#) □

EEOC: COVID-19 tests permissible, antibody tests not

June 19, 2020 in [MeatPoultry.com](#) by Erica Shaffer

The agency clarified what is allowed under Americans With Disabilities Act.

[Click here for full article](#) □

Sonny Perdue: COVID-19 pushing ag toward innovation

June 5, 2020 in [WattAgNet.com](#) by Elizabeth Doughman

Supply chain challenges associated with COVID-19 highlighted the importance of innovation and new technologies in food production, the U.S. Secretary of Agriculture Sonny Perdue said this week.

[Click here for full article](#) □

Egg research aids development of COVID-19 protective wear

July 7, 2020 in WattAgNet.com by Elizabeth Doughman

IgY-coated air filters and masks could be used by workers in poultry and meat processing plants against the virus.

New technology that uses chicken antibodies extracted from eggs could offer instant protection against COVID-19 in a range of applications from chewable tablets to coated air filters and masks.

Why chickens are a good model

For the research, chickens are immunized against COVID-19. The injections are completely safe for the birds, although their immune system responds by producing a specific type of antibodies called immunoglobins (IgY), proteins made by the immune system that attach to foreign substances. Research has shown that chickens are not susceptible to COVID-19.

“When a chicken is exposed to COVID-19, it produces antibodies that bind to the coronavirus’ spike proteins. The virus needs these spike proteins, which give the coronavirus its crown-like appearance, to infect humans,” explained Pia Becker, the Public Relations Officer for [IgNova](http://IgNova.com), a biomedical research company that recently filed a patent on an egg immunoglobulin technology to control COVID-19.

Chickens are a popular model for research involving immunoglobins and antibodies in humans and other mammals because they provide a less-expensive and faster way to produce large amounts of antibodies than other models.

When these chickens lay eggs, the mothers immunoglobulin is passed on to their offspring. Researchers can extract the antibodies for use in a variety of food and human health applications.

“When mammals, such as humans, nurse their babies, they pass on a stock of antibodies from the mother. For hens, the only possibility to support her chicks’ immune system is through the egg. The egg yolk is, therefore, something like breast milk for the chicks, packed with protective antibodies,” Becker said.

How the technology works

The patented technology with the chicken immunoglobulin binds to spike proteins, a key component in helping COVID-19 stick to a protein on human cells called ACE2.

“The IgY against SARS-CoV-2 interferes with this process. It binds to those parts of the spike protein that would normally bind to ACE2, effectively neutralizing the virus,” Becker said.

Potential applications

The company hopes to introduce its line of protective products – including chewable tablets, sprays, mouthwash and coated air-filters and masks for medical professionals and other high-risk professions – to the market in the fall of 2020.

“IgY-coated air filters and masks are one application we envisage to protect medical professionals and other at-risk professions, including workers in poultry or meat processing plants,” Becker added. □

Rare air: U.S. meatpackers try air cleaning tech after COVID-19 outbreaks

July 17, 2020 in Reuters.com by Tom Polansek

Two of the world’s largest meatpackers said on Friday they have installed ultraviolet air cleaning equipment in some U.S. plants, as pressure mounts on food companies to protect workers amid growing concerns about airborne transmission of the coronavirus.

JBS USA, owned by Brazil’s JBS SA and one of four major U.S. beef processors, said it installed “ultraviolet germicidal air sanitation” equipment in plant ventilation and air purification systems that use a specific frequency range of light waves to kill germs.

[Click here for full article](#) □

Bats and maybe some scaly anteaters likely caused COVID-19 pandemic; they could do it again

July 23, 2020 in FoodSafetyNews.com by Dan Flynn

An article published Wednesday in the American Journal of Tropical Medicine and Hygiene by eminent scientists suggests naturally infected bats and scaly anteaters called pangolins in Asia and Southeast Asia likely caused the COVID-19 pandemic.

“The specific mechanism for how it emerged in humans remains unknown,” say the authors. “Nevertheless, a large body of virology, epidemiologic, veterinary and ecologic data establishes that the new virus, SARS-CoV-2, evolved directly or indirectly from a B-coronavirus in sarbecovirus (SARS-like virus) group that naturally infect bats and pangolins in Asia and Southeast Asia,” says the abstract.

[Click here for full article](#) □

VIDEO: Resumption of school is a big question for poultry

July 17, 2020 in WattAgNet.com by Austin Alonzo

COVID-19 is spiking across the U.S. The poultry industry should consider the possibility of limited demand from schools and universities.

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Preliminary thoughts on Supply Chain Resilience Lessons-being-Learned

June 23, 2020 from FEMA SCAN

It has been less than six months since the world became aware of risks associated with a novel coronavirus identified in China's Hubei province. Four months ago, the first health emergencies were declared in the United States. Barely three months ago the first few covid-19 fatalities were recognized in the United States. Today many more than [228,000 Americans with covid-19 have been hospitalized](#). (Just the number is tough to tie down.) More than 112,000 Americans have died of consequences tied to the virus.

Since mid-March Non-Pharmaceutical-Interventions (NPIs) implemented to slow and contain the disease have made progress "flattening the curve". The NPIs have also caused severe economic consequences. While there has been some improvement since shutdowns were loosened, the [Bureau of Labor Statistics estimates](#) that in May, 3.9 million Americans had been unemployed for less than five weeks and 14.8 million Americans had been unemployed for between five and fourteen weeks. The vast majority of these job-losses can be tied to the economic slowdowns, shutdowns and even some lockdowns deployed to contain the pandemic. (The World Health Organization declared a pandemic on March 11.)

Supply Chain Resilience is principally concerned with serving the fundamental needs of large populations in the aftermath of potential catastrophes. Supply Chain Resilience recognizes that large populations cannot be well-served unless preexisting demand and supply networks persist or are quickly recovered. The morbidity, mortality, economic, social, and political consequences outlined above meet most definitions of catastrophe. The health risks and economic implications encompass a large population.

Today we seem to have passed our first peak in a very active first phase of the pandemic. Prior pandemics suggest [second wave possibilities](#) ([more](#) and [more](#)). Have any Supply Chain Resilience lessons-learned been revealed? If so, what do these outcomes mean for the next several months of continued risk and uncertainty? While needing continued observation and testing, following are three characteristics of demand and supply networks that the pandemic and NPIs have seemed to amplify:

1. **Persisting and accurate demand-signaling reinforces – can energize – resilience**
2. **Where functional and physical channels (lanes, links, edges) persist, Supply Chain Resilience is possible, even likely**
3. **High-volume, high-velocity, decentralized demand and supply networks have resilient strategic capacity**

There are dozens of other potential lessons emerging from the pandemic, but most strike me as tactical expressions of the preceding three strategic issues. Applying these three strategic lenses prospectively, I am concerned that 1) increased long-term unemployment will result in further deterioration of demand and related shedding of supply capacity... many more people will be hungry; 2) Recurring viral oscillations will prompt state and local measures that increase network fragmentation, reducing flow velocity and effective capacity; and 3) lack of social distancing and PPE, combined with increasing covid-19 transmissions, will systemically reduce workforce capacity and network flow. The initial supply chain shocks caused by sky-rocketing demand and unprecedented Non-Pharmaceutical Interventions are now being succeeded by long-term stresses with the prospect of recurring shocks.

In the near-term – say, the next year or two – the lessons-being-learned seem to suggest focusing on demand management as the most strategically effective way of ensuring large populations continue to be well-supplied. The commercial sector has been assertively creative in this regard. The public sector role has been just as important, but is not a typical tool, especially for emergency management. Wherever and whenever network flows are disrupted, identify and remove the source of disruption ASAP. This is a key role of emergency management but often needs to be conceived more broadly. Then, over the long-term, both the private and public sectors need to recognize the risks involved in functional and/or geographic concentrations of capacity. We need to practice proactive private-public strategic risk management by transferring, avoiding, reducing, or *explicitly* accepting the risk, presumably with some mitigation measures actively applied.

The Supply Chain Analysis Network (SCAN) supports the FEMA Logistics Management Directorate with analysis and subject matter expertise. The background, points-of-view, and opinions expressed by SCAN do not necessarily represent the positions or policies of the Department of Homeland Security or the Federal Emergency Management Agency. Ecosystem Assessments attempt to synthesize a strategic view of critical supply chain flows, principal nodes, links and/or channels, and dependencies. □

Coronavirus to Cut American Meat Consumption for First Time in Six Years

June 11, 2020 in [PerishableNews.com](#) by Elizabeth Rembert, Bloomberg

Americans are kicking their meat-eating habit, and it's all thanks to the novel coronavirus. That's according to researchers at the University of Missouri's Food & Agricultural Policy Research Institute, who predict this year's per-capita meat consumption will fall for the first time since 2014. Higher prices and a reduction in disposable income will hurt demand for beef, pork and turkey, while **Americans will eat marginally more chicken.**

[Click here for full article](#) □

What will the poultry industry look like post-COVID-19?

July 22, 2020 in [WattAqNet.com](#) by Elizabeth Doughman

In 2020, the poultry industry grappled with challenges associated with the global COVID-19 pandemic – from supply chain issues to changes in how and where people consumed chicken. Which emerging technologies will solve these problems?

[Click here for full article](#) □

Rabobank: Poultry prices, demand will see some recovery

July 7, 2020 in [WattAgNet.com](#)

Outlook for the global poultry industry expected to be improved in second half of the year

The outlook for the global poultry industry is expected to be improved in the second half of 2020, as the industry recovers from challenges being brought on by the COVID-19 pandemic, according to the recently released [Rabobank Poultry Quarterly](#) report.

Poultry demand will be more bullish during the second half of the year, as COVID-19 containment measurements are eased, lifting demand through foodservice. The biggest market driver for the half will be the economic downturn, making global markets more volatile and price driven, according to the Rabobank report. Such conditions are generally positive for poultry, since it is the least expensive meat protein, which has a short and flexible production cycle.

According to the report, poultry prices will see some recovery after historic lows in the first half, with traded poultry prices dropping between 5% and 25%. Breast meat should benefit from the reopening of foodservice, although trade will remain difficult. Dark meat will likely do better. Supply in some markets will be tight, due to reduced parent stock.

“Volatility could be exacerbated by ongoing challenges to balance supply and demand and by exchange rate instability. On the other hand, the bearish feed price outlook will provide producers some relief on the cost side of their businesses,” Nan-Dirk Mulder, senior analyst – Animal Protein, said in a press release.

U.S. outlook

According to the report, there was no noticeable change in the U.S. breeding flock through April, but placements were down 14 million in May. As a result of those lower placements, the number of broilers being slaughtered in the coming months should be reduced. This reduction is expected to be partially offset by gradual increases in weights. For the year, Rabobank expects 1% production growth, and poultry consumption should benefit as consumers seek lower-cost proteins.

[Click here for full article](#) □

China to end sale of live poultry at wet markets

July 10, 2020 in [PoultryWorld.net](#) by Natalie Berkhout

China has vowed to gradually phase out the slaughter and sale of live poultry at food markets. Wet markets often come under suspicion when new disease outbreaks are tracked and traced.

[Click here for full article](#) □

USDA Launches New Farmers.gov Features to Help Farmers Hire Workers

(Washington, D.C., July 27, 2020) U.S. Secretary of Agriculture Sonny Perdue today announced new features on the U.S. Department of Agriculture’s (USDA) [Farmers.gov](#) website designed to help facilitate the employment of H-2A workers.

“My mission from the beginning of my time as Secretary was to make USDA the most effective, most efficient, most customer-focused department in the entire federal government – these changes to [Farmers.gov](#) are doing just that. USDA’s goal is to help farmers navigate the complex H-2A program that is administered by Department of Labor, Department of Homeland Security, and the State Department so hiring a farm worker is an easier process,” said Secretary Perdue. “President Trump knows how essential these workers are to our farmers and America’s food supply chain. We will continue working to streamline these and other processes to better serve our customers across the country.”

Background:

The primary new H-2A features on Farmers.gov include:

- ◆ A real-time dashboard that enables farmers to track the status of their eligible employer application and visa applications for temporary nonimmigrant workers;
- ◆ Streamlining the login information so if a farmer has an existing login.gov account they can save multiple applications tracking numbers for quick look-up at any time;
- ◆ Enables easy access to the Department of Labor’s (DOL) Foreign Labor Application Gateway (FLAG);
- ◆ Allows farmers to track time-sensitive actions taken in the course of Office of Foreign Labor Certification’s (OFLC) adjudication of temporary labor certification applications;
- ◆ Allowing for farmers to access all application forms on-line.

All information can be found at www.farmers.gov/manage/h2a.

In 2018, [Secretary Perdue unveiled farmers.gov](#), a dynamic, mobile-friendly public website combined with an authenticated portal where customers can apply for programs, process transactions and manage accounts. With feedback from customers and field employees who serve those customers, [Farmers.gov](#) delivers farmer-focused features through an agile, iterative process to deliver the greatest immediate value to America’s agricultural producers – helping farmers and ranchers do right, and feed everyone. □

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lit-ter / man-age-ment

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New Avian Leukosis Rule Expected to Reduce Waste, Improve Efficiency for Processing Plants and FSIS

August 13, 2020 in [PoultryHealthToday.com](#)

Acceptance of a petition designating avian leukosis lesions on poultry carcasses as a trimmable condition is expected to reduce waste and improve efficiency at processing plants while allowing meat inspectors to focus more on food safety, said Ashley Peterson, senior vice president, scientific and regulatory affairs for the National Chicken Council (NCC).

[Click here for full article](#) □

CDC: Nearly 1,000 salmonella infections from backyard poultry

August 6, 2020 in [MeatingPlace.com](#) by [Kate Gibson](#)

Public health officials are investigating 15 multi-state outbreaks of salmonella infections linked to backyard poultry flocks that have sickened 938 people across the U.S., according to an update posted on the website for the Centers for Disease Control and Prevention (CDC).

The number of illnesses related to Americans raising chicks and ducklings at home exceeds reported cases at the same time last year, [according to an update posted last week](#) by the CDC. Of the cases reported in 48 states, 151 involved hospitalizations and one death in Oklahoma, the CDC stated.

Raising live poultry for eggs and companionship has become increasingly popular in the U.S., with more Americans buying chicks and ducklings from agricultural stores, websites and hatcheries.

The outbreaks have led the CDC to warn the public against cuddling or kissing chickens, with small children especially at risk at being infected.

[In late October of 2019](#), the CDC said it had concluded its investigation of 13 outbreaks of salmonella infections related to backyard flocks that sickened 1,134 people in 49 states. Of that total, two people died and 219 were hospitalized. □

Early intervention critical for effective control of Campylobacter in poultry processing

April 23, 2020 in [PoultryHealthToday.com](#)

An interview with Stephen Mixon, Food Safety Technical Specialist, Zoetis

Q: USDA's Food Safety and Inspection Service (FSIS) will be publishing new performance standards for allowable limits of *Campylobacter* in chicken parts and whole carcasses. What can poultry processors do to further reduce the prevalence of this bacterial foodborne pathogen?

SM: The poultry industry has been struggling with *Campylobacter* ever since FSIS started using a more sensitive test for detection of *Campylobacter* in chicken rinsate samples. Several USDA-approved bacterial interventions are available for managing *Campylobacter*, but they need to be used at the right time during processing. They need to be applied early in processing, before chickens are in the cut-up area, because that's when *Campylobacter* bacteria appear to be most vulnerable.

[Click here for full article](#) □

Research Examines the Role Dietary Calcium Plays in Necrotic Enteritis Development and Pathogenesis

July 8, 2020

USPOULTRY and the USPOULTRY Foundation announce the completion of a funded research project at Texas A&M University in College Station, Texas, in which the role dietary calcium plays in necrotic enteritis (NE) development and pathogenesis was examined.

Overall, dietary Ca level appeared to be a risk factor for NE occurrence. The most impactful finding of this research was that dietary Ca, in particular limestone particle size, limestone geographic source and diet inclusion levels, are complex contributors to intestinal health and broiler performance. Both experiments suggest that limestone characteristics need to be further examined for the influence they have on intestinal health, nutrient digestibility and bird performance. Furthermore, the effects of Ca level and limestone characteristics were dependent on the diet protein type (animal vs veggie). These results have direct application to the poultry industry for consideration of not only level of dietary Ca in formulation, but Ca sources regarding the characteristics of the limestone and the impact on intestinal health, potential risk for NE and broiler performance dependent on the protein type of diet. To see the full report click [here](#). □

Genetically Improving Resilience to Newcastle Disease

June 11, 2020 in [PoultryWorld.net](#) by Natalie Berkhout

A team of international scientists in Africa and the United States are developing strategies to genetically improve the resistance of chickens to Newcastle Disease virus in indigenous chickens in Africa.

[Click here for full article](#) □

Poulvac® Procerta™ HVT-ND fully protects against Newcastle disease by 19 days of age

June 18, 2020 in [Poultry Health Today](#)

Rigorous research and cutting-edge technology went into creating Poulvac® Procerta™ HVT-ND, a recombinant vaccine with a highly effective immune response, explained molecular biologist and microbiologist Sing Rong, PhD, Zoetis.

“We had stringent criteria for selecting a recombinant before we finally decided we had a winner based on its excellent efficacy, a 19-day onset of immunity against virulent ND virus as well as its stability,” she said.

[Click here for full article](#) □

ND Stable in US but Poultry Industry Should Be on Lookout for Evolving Strains

July 13, 2020 in [PoultryHealthToday.com](#)

Newcastle disease (ND) throughout most of the US remains stable, but the industry needs to be on guard for changes in the virus that may require adaption of ND vaccines, Guillermo Zavala, DVM, PhD, president, Avian Health International, cautioned in an interview with Poultry Health Today. The ND strains circulating in most of the poultry-dense regions of the US are still the milder, lentogenic type that cause some respiratory and uniformity problems. They are nothing like the virulent form of ND that started in California backyard flocks, ultimately making its way to a few commercial flocks where it caused substantial losses.

[Click here for full article](#) □

Non-Chemical Approaches to Controlling Red Mite - What Works?

July 22, 2020 in [ThePoultrySite.com](#) by Jon Walton

Control of poultry red mite (PRM) has traditionally relied upon use of synthetic pesticides that specifically target ticks and mites – otherwise know as acaricides. However, in Europe there are currently very few chemical acaricides available for use, as many have been withdrawn due to consumer safety regulations. Resistance to chemical products has also been widely reported, which means that relying on stand-alone chemical treatments is no longer satisfactory. Increasing attention is being paid to non-chemical-based treatments for the control of PRM. Here, we review the non-chemical products which are now available to poultry farmers and the promising new products in development.

[Click here for full article](#) □

Chicken wearables detect parasite infestations

July 20, 2020 in [WattAgNet.com](#) by Elizabeth Doughman

New wearable sensor technology – [nicknamed “Fitbits for chickens”](#) – could help make it easier for farmers to monitor poultry welfare by serving as an early warning system for the northern fowl mite.

“This is a tool that helps me to understand how mites are negatively affecting the health and the welfare of the birds,” explains Amy Murillo, an entomologist at [University of California, Riverside](#).

[Click here for full article](#) □

Avian Reovirus, Molecular Characterization

August 21, 2020 in [ZootechnicalInternational.com](#)

Avian reovirus (ARV) is the main cause of viral arthritis and tenosynovitis in chickens and turkeys, triggering economic losses in the poultry industry due to impaired feed conversion rates, lack of uniformity and increased condemnations in the affected flocks worldwide.

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Kenny Williamson

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Commercial Lending Team Leader

601-607-4402

KennyWilliamson@BankPlus.net

Avian flu mutations could increase threat to poultry

July 23, 2020 in [FeedStuffs.com](https://www.feedstuffs.com)

In evolving to escape chicken immune system, mutated H7N9 viruses reduced their risk to human health while increasing threat to poultry.

Mutations in the H7N9 bird flu virus increased its replication rate and stability in avian cells but reduced its preference for infecting human cells, according to a new study from The Pirbright Institute in the U.K.

The results show that outbreaks in birds caused by strains with these mutations could pose a lower risk to human health while remaining a significant threat to the poultry industry, Pirbright said.

H7N9 low-pathogenicity avian influenza virus usually infects birds, but in 2013, the first human case was recorded in China. Since then, there have been more than 1,500 confirmed human infections, with about 40% of cases resulting in fatalities, the institute explained.

Further evolution of the H7N9 virus gave rise to a high-pathogenicity avian influenza strain that could cause 100% mortality in chickens. In 2017, China initiated a wide-scale vaccination program in chickens that drove down cases of both the low- and high-pathogenicity strains, Pirbright said.

Previous Pirbright research identified three mutations in avian influenza H7N9 viruses that enabled them to overcome immunity generated by vaccines. The mutations altered a protein on the outside of the virus called haemagglutinin (HA), which binds to host cell receptors and allows the virus to enter and cause infection.

In the latest study, published in the [Journal of Virology](https://www.journalofvirology.org), the team discovered that the same mutations occurred in H7N9 viruses isolated from the field in 2019, which most likely emerged in birds that had been either immunized or naturally infected, Pirbright said.

Analysis of the viruses demonstrated that strains with these mutations have significantly increased replication rates in both chicken cell cultures and chick embryos as well as display greater acid and thermal stability, which could improve transmission ability, according to the announcement.

The mutations also influenced which animal cells the strain could enter; their HA proteins could still bind to the receptors of bird cells, but they lost their affinity for human cell receptors. These findings show that in evolving to escape the chicken immune system, the mutated H7N9 viruses have reduced their risk to human health while increasing the threat they pose to poultry, Pirbright said, noting that further studies in birds are needed to confirm the impact this could have on infection and disease spread.

Professor Munir Iqbal, head of the [Avian Influenza Group](https://www.pirbright.ac.uk/avian-influenza-group) at Pirbright, said, “Our approach has allowed us to accurately predict avian influenza mutations that appear in the field and assess how these mutations could affect the risk they pose to both human and avian populations. This information can be used to inform surveillance efforts and provide early warnings of potentially dangerous emerging strains.” □

Insight into AI highlights its harmful infection potential

August 10, 2020 in [PoultryWorld.net](https://www.poultryworld.net) by [Tony McDougal](#)

Commercial poultry should be protected from the risk of contracting harmful bird flu from migrating flocks, according to new research.

Insights from a study of the devastating 2016/17 bird flu outbreak show how highly pathogenic bird flu viruses can be transmitted from wild migrating bird population to domestic flocks and back again.

These viruses can readily exchange genetic material with other low pathogenic viruses – which are less harmful – during migration, raising the likelihood of serious outbreaks in domestic poultry and wild birds.

Data learned from 2016/17 AI outbreak

The study, led by a team including the Roslin Institute, representing the Global Consortium for H5N8 and Related Influenza Viruses, studied the genetic makeup of the 2016/7 bird flu virus in various birds at key stages during the flu season. The outbreak began in domestic birds in Asia before being spread via wild migratory flocks to create the largest bird flu epidemic in Europe to date. The team interpreted genetic sequence data from virus samples collected during the outbreak, together with details of where, when and in which bird species they originated. Using a computational technique, known as phylogenetic inference, researchers estimated where and when the virus exchanged genetic material with other viruses in wild or domestic birds.

Exchange of genetic material between wild and commercial birds

The virus could easily exchange genetic material with other, less harmful viruses, at times and locations corresponding to bird migratory cycles. These included viruses carried by wild birds on intersecting migratory routes and by farmed ducks in China and central Europe. Migratory birds harboring weaker viruses are more likely to survive their journey and potentially pass disease to domestic birds, the study found.

Bird flu viruses can readily exchange genetic material with other influenza viruses...

continued on next page

Insight into AI highlights its harmful infection potential *(continued from previous page)*

Commenting on the results, Dr Sam Lycett of the Roslin Institute, said: "Bird flu viruses can readily exchange genetic material with other influenza viruses and this, in combination with repeated transmission of viruses between domestic and wild birds, means that a viral strain can emerge and persist in wild bird populations, which carries a high risk of disease for poultry. This aids our understanding of how a pathogenic avian flu virus could become established in wild bird populations."

The research, published in Proceedings of the National Academy of Sciences, was carried out in collaboration with the Friedrich Loeffler Institute, Germany, the Erasmus University Medical Centre, Holland and the University of Edinburgh's Usher Institute and Roslin Institute. It was supported by funding from EU Horizon 2020 and others. □

Reducing antibiotics: 4-phase farm management blueprint - Changing role for poultry meat in Europe

August 11, 2020 in [PoultryWorld.net](#) by [Harmen Jan Platvoet](#)

Reducing antimicrobials from poultry production requires good farm management.

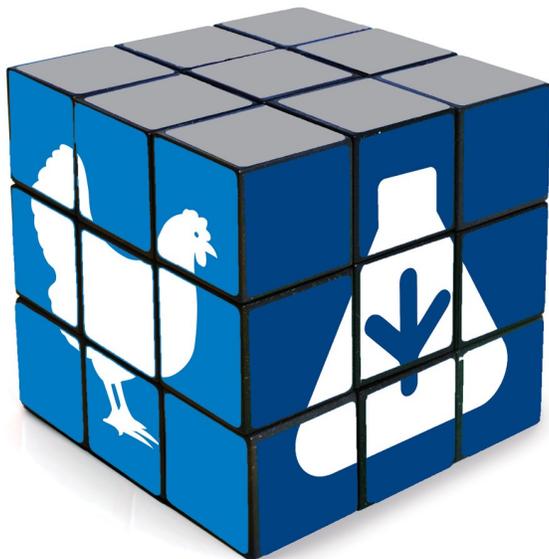
[Click here for full article](#) □

Hatcheries in NAE production systems can't cut corners

June 4, 2020 in [PoultryHealthToday.com](#)

Hatcheries providing chicks for no antibiotics ever (NAE) production need to be meticulous with cleanliness and good husbandry practices in order for the program to succeed, Scott Martin, an independent poultry consultant specializing in hatcheries, told *Poultry Health Today*.

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Accelerometers may help detect poultry meat defects

June 5, 2020 in [FeedStuffs.com](https://www.feedstuffs.com)

Researchers plan to use accelerometers to identify meat quality problems, as defects may vibrate differently from undamaged meat.

Can a Fitbit help deliver a better chicken dinner? University of Arkansas researchers Casey Owens, Qinghua Li and Yan Huang are proposing the use of accelerometer technology to do just that.

Poultry science professor Owens and assistant professor of animal science Yan Huang, both in the University of Arkansas System Division of Agriculture, along with Li, associate professor in the University of Arkansas department of computer science and computer engineering, have been awarded a research grant from the U.S. Poultry & Egg Assn. for research to detect woody breast in broilers using accelerometer technology.

For Fitbits and lots of other devices that monitor or measure motion, accelerometers are what make them work. Owens said woody breast is one of numerous potential meat quality defects and is perhaps the one most responsible for dissatisfied chicken consumers.

Owens, the Novus International professor of poultry science at the Arkansas Agricultural Experiment Station, conducts research on meat quality defects in broiler meat, including woody breast, white striping and others. She recently developed predictive models for the detection of woody breast in broiler carcasses using image analysis of shapes associated with woody breast, a process for which she is seeking a patent, the university said in an announcement.

Li conducts research in mobile sensing, artificial intelligence and cybersecurity. He has used various sensors on mobile platforms to develop anomaly detection and machine learning technologies to address challenges in multiple disciplines.

“The broiler industry has been challenged with a condition referred to as woody breast for the past several years that can affect a significant proportion of products,” Owens said. “It is a condition that develops early in life and becomes more pronounced as birds get closer to market age. It results in compositional changes within the meat, namely an increase in collagen and fat, which further impact meat quality.”

Owens said woody breast has lower water holding capacity and decreased binding ability that affects some processed products. It also causes alterations to cooked meat, making it rubbery, tough or crunchy.

“The result can be substantial economic losses for the poultry industry,” Owens said. “It can cost the industry millions of dollars annually due to lost yield, increased processing costs for more labor to sort product and lost business because of customer dissatisfaction.” The ability to detect woody breast could help avoid those costs, Owens said.

She teamed up with Li and Huang to apply technology from the world of fitness and health monitoring to the poultry industry.

Good vibrations

Accelerometers are common technology today, Li said. Designed to measure changes in inertia, they are used in Fitbits and other wrist devices to count steps, in smartphones to detect motion and in cars for many purposes, including activating the airbag in an accident. Accelerometers can even measure vibrations, and that is how Li wants to employ them.

“Woody breast must vibrate and transfer vibration differently from normal breast,” Li said. “Modern accelerometers have high resolution, as shown in various health applications, and should be able to capture such differences when combined with machine learning.”

In research expected to begin this fall, Li plans to attach accelerometers to the breasts of live birds in hopes of identifying motions associated with woody breast.

Li will also place the devices on top of deboned breast meat. Vibrations will be introduced through a countertop and measured as they move through the meat, he said. These will be correlated with woody breast defects that may be present.

“Preliminary data suggest that muscles can present varying vibration patterns via accelerometers depending on degrees of woody breast severity,” Li said. “It is likely that muscle with increased collagen — indicating woody breast — and normal muscle have rather different mechanical properties that would lead to differences in vibration patterns.”

Owens said, “Development of tools that the industry can use has been an interest for us. We will have the ability to use this technology and combine it with other measurements that we have assessed for woody breast predictors, such as bird and carcass dimensions and fillet hardness.

“This proposed research is novel, unique and has the potential to provide a useful tool to the poultry industry for detection of woody breast in live broilers and fillets,” Owens said.

Early intervention

Owens said there is a great deal of ongoing research to determine the root causes of this condition in broilers.

continued on next page

Accelerometers may help detect poultry meat defects *(continued from previous page)*

Woody breast is more commonly found in older, larger broilers, Owens said, so it can affect those markets that favor larger birds, especially larger chicken breasts.

“Developing a more predictive method of identifying birds in the field would allow better selection of animals for research and breeding programs,” she said.

Owens added that online process control is a developing area for the poultry industry because it allows processors to have more real-time quality control. The use of online assessment tools to predict woody breast would be useful to processors for the ability to sort fillets and then segregate and divert woody breast away from premium whole-muscle products into more suitable products like patties and nuggets. □

Biomim: Mycotoxins Contribute to Poultry Diseases and Vaccine Impairment

June 4, 2020 in [Biomim.net](#) by Dr. Timothy Jenkins

While we historically link mycotoxins in poultry to classic symptoms such as reduced feed intake, oral lesions, reduced productivity, etc., producers are often unaware of the link between mycotoxins and health.

Several lesser-known effects of mycotoxins in poultry related to disrupting gut integrity reinforce the importance of mycotoxin risk management to protect the health and profitability of flocks. The discovery that mycotoxins affect animal health was surprisingly recent. It was in the 1960's and it explained the sudden death of 100,000 turkeys in the United Kingdom. It turned out that *Aspergillus* growing on peanut meal produced small amounts of a compound called aflatoxin. The problem had been in the detection of such secondary metabolites of fungi that are often highly toxic but usually present in tiny quantities. Tiny but lethal in the case of those turkeys. Now there is growing awareness of the variety of mycotoxins, how frequently they are present in animal feed and, importantly, how much of their effect can simply be impaired performance and increased susceptibility to disease.

[Click here for full article](#) □

Transforming the way we manage mycotoxin-related stress

August 12, 2020 in [All About Feed.net](#) by [Dr Christos Gouquolias](#)

Technological advancements for the detection of mycotoxins have exploded in recent decades. However, we are still missing the obvious: we haven't yet quantified and thus, assessed the true exposure of animals to mycotoxins.

Although field surveys and feed risk assessments are valuable, their real usefulness (when applied in isolation) remains highly questionable, since they fail to reveal the true exposure of animals to mycotoxins. Feed sampling per se, is problematic. Nearly 90% of the error comes from the sampling itself, whereas only ~ 10% is down to analytical error. Everyone is aware of feed 'hot-spots'. Also, routine feed sampling does not reveal masked mycotoxins. Both limitations can lead to a major underestimation of the true risk.

[Click here for full article](#) □

Scientists find path to heart failure in fast-growth broiler chickens

By [Susan Kelly](#) on 6/15/2020 in [MeatingPlace.com](#)

A study comparing fast-growing broiler chickens to their slower-growth counterparts has identified protein damage responsible for the development of dilated cardiomyopathy (DCM) and heart failure in the birds.

Heart pump failure is a major health issue for the broiler industry worldwide, with associated economic losses of more than \$ 1 billion annually, according to the University of Saskatchewan researchers.

To understand why fast-growing broiler chickens suffer from heart problems, researcher Andrew Olkowski and colleagues compared them with slower-growing broilers, which have a much lower risk of heart failure, and with Leghorn chickens, which are resistant to heart failure.

“I couldn't see obvious changes that could explain heart pump failure under the microscope, so I thought, maybe it's some more subtle problem with the heart muscle proteins themselves that is not apparent on light microscopy. When we looked at that using infrared micro-spectroscopy, it was fairly immediately obvious,” said Olkowski.

Using a Mid-IR beamline at the Canadian Light Source at the University of Saskatchewan, Olkowski was able to identify misfolded and damaged proteins building up in the heart. Further analyses revealed that the chickens had a hard time disposing of the misfolded protein aggregates, which eventually led to health failure.

The study results, [published in Avian Pathology](#), suggest that heart issues in fast-growing broiler chickens might be linked to how their genes respond to epigenetic factors like nutrition and their environment. □

AVMA Launches Inaugural Report Describing Antimicrobial Resistance in Animals

August 5, 2020 at [AVMA.org](https://www.avma.org)

Antimicrobial resistance is a growing risk with direct impacts on the health of animals and the potential to affect human health. The American Veterinary Medical Association (AVMA), the leading voice of the veterinary profession, released Antimicrobial Resistant Pathogens Affecting Animal Health in the United States, the newest addition to the arsenal of interdisciplinary resources dedicated to combating the threat of antimicrobial resistance. It is the first report describing the current status of antimicrobial-resistant bacteria affecting various animal species in the United States.

[Click here for full article](#) □

Poultry industry adapts to changes around beak trimming

April 24, 2020 in [PoultryWorld.net](https://www.poultryworld.net) by Tony McDougal

Moves to outlaw beak trimming in parts of Western Europe have prompted the poultry industry to respond with a range of developments.

[Click here for full article](#) □

DNA insights help poultry producers in developing countries

June 10, 2020 in [PoultryWorld.net](https://www.poultryworld.net) by Tony McDougal

New findings about viral regions in the DNA of chickens could aid productivity for smallholder farms in developing nations.

[Click here for full article](#) □



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Crops pick up pathogens from nearby livestock/poultry: study

July 22, 2020 in [MeatingPlace.com](#) By [Lisa M. Keefe](#)

Pathogens can contaminate crops on farms that are located near livestock feeding operations, according to a new study by researchers from the University of California-Davis.

The results could shed light on how other crops and produce, such as romaine lettuce, could become contaminated with pathogens typically associated with livestock, and sicken consumers.

Over a two-year period, researchers collected and tested swabs from almond orchards located next to a commercial poultry farm, as well as from control orchards that were not, according to an article published in [Applied and Environmental Microbiology](#). They tested air, soil and almond leaf samples from an almond orchard adjacent to (35 meters from the first row of trees) and downwind from a poultry operation, and in two almond orchards (controls) that were surrounded by other orchards. Samples were evaluated for aerobic plate count, generic *Escherichia coli*, other coliforms, the presence of *Salmonella*, bacterial community structure, and amounts of dry solids (dust) on leaf surfaces on trees 0, 60, and 120 m into each orchard.

E. coli was isolated from 20% of the air samples collected near the poultry operation, and from just 0.48% of air samples collected from the control orchards. On average, the amount of dry solids on leaves collected from trees closest to the poultry operation was more than two-fold greater than the dust collected from trees 120 meters into the orchard or from any of the trees in the control orchards. Members of the family *Staphylococcaceae* — often associated with poultry — were, on average, significantly more abundant in the trees closest to the poultry operation than in trees 120 meters into the orchard or from any of the trees in control orchards.

Salmonella was not isolated from any of the 529 samples evaluated.

The data, researchers wrote, could provide growers with information they can use to evaluate food safety risks on their property. □

Key gene plays important role in layer bone strength

March 17, 2020 in [PoultryWorld.net](#) by [Tony McDougal](#)

Pan-European research has shown there is a specific gene associated with better quality bones in laying hens.

Hens with the gene, named cystathionine beta synthase (CBS), had bones with raised mineral content and cross-linking of collagen protein, suggesting that these factors may be important for the differences in bone quality.

Scientists from Sweden, Spain, Germany, Czech Republic, the UK and China, looked in detail at a region of chicken DNA, which was known from previous studies to be linked to risk of bone fractures. They studied generations of hens, looking at the level of activity in genes and the strength of the hens' bones. They believe the discovery will not only inform selective breeding but may also lead to better health in hens that lay eggs, which are at risk of osteoporosis.

Professor Ian Dunn, of the Roslin Institute, said: "Hens that produce eggs, especially those that are free-range, carry a risk to their bones because of the resources they need for laying. "Our findings highlight the importance of a key gene, CBS, for healthy bones. Further work may show whether other nearby gene on the chicken genome are also of significance."

[The study has been published in Genetics Selection Evolution.](#) □

Effects of sweeteners on broiler performance

July 16, 2020 in [PoultryWorld.net](#) by [Natalie Berkhout](#)

Effects of 3 sweeteners on growth performance, serum biochemicals, and jejunal physiological functions of broiler chickens was investigated.

[Click here for full article](#) □

The Effects of Diet and Epigenetic Alterations on the Gut Microbiome, Inflammation and Poultry Production

June 26, 2020 in [Zootecnica International](#) by [Michael H. Kogut](#)

The gut microbiota is a fundamental force influencing diverse aspects of avian physiology. Microbiome studies are at a critical juncture and facing a challenging transition from descriptive studies of association towards mechanistic studies tackling causality. Essential for this transition is a diversity of thinking (chemical and systems biology, metabolism, microbiology, physiology and immunology) and approaches (assays and models).

[Click here for full article](#) □



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Rivals battle to promote higher poultry welfare standard

June 12, 2020 in [PoultryWorld.net](https://poultryworld.net) by Tony McDougal

2 UK farm assurance schemes have introduced new labelling to promote higher welfare broilers as interest in the Better Chicken Commitment continues to grow. It also enables them to differentiate UK chicken from other imported birds post Brexit.

RSPCA Assured

Earlier this spring, RSPCA Assured launched a series of icons to help display its farm animal welfare standards more clearly for retailers. The charity said it wanted to help convey the essence of what RSPCA Assured does “in a visually pleasing and yet simple way”.

Icons are based around the following areas:

- More space to roam around
- Natural daylight and shade for free range birds
- Raised perches to perch on
- Managed to a dedicated set of welfare standards
- More daily inspections
- Straw bales and other objects to peck at
- Sand or other materials to encourage dust bathing
- Slower growing breeds
- Welfare assured from birth to slaughter

Red Tractor Food Assurance

And now Red Tractor Food Assurance has launched a new marque covering enhanced welfare for chicken, to help people looking to buy birds that have been raised to specific production methods. The new marque retains the company’s union flag and distinctive tractor with the heart in the wheel sitting on a “tick” but replaces the words Certified Standards from the core logo, with the farming method used.

Each new marque will have its own color:

- Free range for Chicken – Orange
- Enhanced welfare for chicken – Purple
- Organic – Green

Chief executive Jim Moseley said he hoped the new approach could strip out some of the complexity from labels on pack and menus.

The enhanced welfare birds must come from:

- A slower growing breed
- Have had more space and natural light in barns to encourage natural behaviors like pecking, scratching, wing flapping and use of perches
- Have been reared to a lower stocking density 30kg/sq metre compared to 38kg/sq metre

Mr. Moseley added: “Underpinned by the safety and traceability of our core standards, the “Enhanced Welfare” range uses selective breeds, such as those from the slower growing Hubbard portfolio, which are reared indoors and have more room to grow for longer.”

Tracey Jones, Director of Food Business at welfare group Compassion in World Farming, welcomed the introduction of the enhanced welfare bird initiative: “It is an important enabler for companies who want to source to this standard and the marque provides a clear visual identity which, along with the free-range and organic labels, allows consumers to understand how their chicken was produced and make informed choices.” Red Tractor has the highest awareness among the UK’s primary shoppers of all other marques, according to a You Gov survey last November, being recognized by 70 per cent compared to 31% for Soil Association and 24% for RSPCA Assured marques. □

Food Lion wants better broiler welfare, but how? (blog)

August 3, 2020 in [WattAgNet.com](https://wattag.net) by Roy Graber

Within the past several years, for the most part, when a business that sells poultry products made an announcement that includes the company’s plans involving broiler welfare, it has meant the company is requiring all of its suppliers to comply with Global Animal Partnership (GAP) or Royal Society for the Prevention of Cruelty to Animals (RSPCA) standards.

[Click here for full article](#) □

Caged broilers on farm could benefit processor yields

June 2020 in [PoultryInternational.com](https://poultryinternational.com) by Eduardo Cervantes López

Raising broilers in large crates could result in increased yields in the poultry processing plant.

[Click here for full article](#) □

Prevent Salmonella with good bacteria in poultry litter

June 19, 2020 in [FarmProgress.com](https://www.farmprogress.com)

USDA study could affect litter downtime, a key point in determining number of litters than can be grown in a year.

Chicken is the most consumed protein in the U.S. According to the National Chicken Council, the U.S. produced more than 9.2 billion broiler chickens in 2019 and consumers spent more than \$95 billion on chicken products.

All these broilers need millions of tons of litter (bedding material). Reusing chicken litter in houses can save costs, but there are some health and safety concerns.

A new study shows that the environment in reused poultry litter can deter growth of pathogens such as Salmonella.

“When you read or hear that broiler litter is reused to raise multiple flocks of chickens, the typical reaction is that it must be bad for food safety,” says Adelumola Oladeinde, a co-author of the recent study. “Our study demonstrates the exact opposite.”

Oladeinde is a researcher at the USDA’s National Poultry Research Center in Athens. He and his colleagues found that good bacteria in used poultry litter can hinder Salmonella growth.

“It may be worthwhile to invest time and resources to characterize the bacteria in reused litter,” he says. “We can develop the promising ones into beneficial microbes for better chicken gut health.”

The study also explored litter characteristics, such as moisture and ammonia levels. These characteristics can dramatically affect the litter microbiome — the mix of bacteria, fungi and viruses in litter.

“Our findings provide new information on the relationship between the physical environment of broiler litter and its microbiome,” he says. “Management techniques that account for both factors may help reduce Salmonella in chickens.”

Chicken litter plays a big role in determining broiler health. After a broiler chick gets to a farm, it usually spends the next several weeks pecking and living on litter. In fact, chicks begin to eat litter even before eating from feeding troughs or drinking. The microbiome in the litter likely become the “first settlers” in the guts of the chicks.

“These first microbes play a key role in determining gut health,” he says. “Therefore, it is critical to determine what a beneficial litter microbiome looks like.”

Finding the 'good' bacteria

The team collected samples of reused poultry litter from the University of Georgia Poultry Research Center. The litter was used to raise three flocks of broiler chickens under conditions such as those used in broiler farms.

“Each sample represents a unique broiler litter environment,” he says.

In the lab, researchers measured characteristics of the litter samples. They then added Salmonella to each sample. After that, the samples were tested for levels of Salmonella, other bacteria and physical characteristics.

Within two weeks of adding Salmonella, most samples developed predictable microbiomes. Certain microbes, such as *Nocardiopsis* bacteria, seemed to reduce growth of Salmonella.

That makes sense, according to Oladeinde. Some species of *Nocardiopsis* bacteria are known to produce antibiotics and toxins. These compounds could be keeping Salmonella levels low in the litter samples.

Reducing downtime

A key aspect of reusing broiler litter is how long to wait before reuse. This waiting period is called litter downtime.

“For farmers, a shorter downtime will result in growing more birds through the year,” he says. However, we know little about how downtime affects litter microbiome.

Results from the study show that surveying levels of specific bacteria could help determine if litters have had enough downtime. That could be of big help to farmers.

“Poultry litter is a complex environment to study,” he says. “We showed that the reused litter, after two weeks of downtime had a microbiome that was unfavorable to Salmonella.”

Oladeinde seeks to repeat these experiments with litter from various sources. He also wants to test for multiple Salmonella strains.

“These studies will tell us about the underlying mechanisms behind reusing litter and reducing Salmonella,” he says.

The research was funded by the USDA’s Agricultural Research Service. Learn more about the work in the [Journal of Environmental Quality](#).

Source: American Society of Agronomy, Soil Science Society of America and Crop Science Society of American, which are solely responsible for the information provided and is wholly owned by the source. Informa Business Media and all its subsidiaries are not responsible for any of the content contained in this information asset. □

Biomarker test could rapidly sex male chicks in ovo

July 16, 2020 in Wattagnet.com by Elizabeth Doughman

Researchers in the Netherlands are working on a high-throughput screening machine to **sex male chicks before they're hatched**.

"Our company set out to find differences in the egg that were unknown. We identified novel biomarkers – a chemical compound in the body that signifies something – that help detect the sex in ovo. We are working on an automated machine that quickly samples each egg," said Wouter Bruins, director at **In Ovo**.

The machine uses an analytical technique called **mass spectrometry** to test each egg for the biomarker. The method determines the egg's sex on day nine after fertilization.

"Basically, we have a machine where eggs go in and come out genotyped," Bruins said.

[Click here for full article](#) □

Propane Report

Aug. 31, 2020 **SPOT PRICING:** Mont Belvieu Propane Spot Price on Aug. 31, 2020 was at a current level of \$0.513, an increase of ten cents over this time last year. The lowest price for the year occurred March 23 at \$0.203 and the highest price this year was \$0.525 on June 5 with prices being fairly steady over the summer months.

Allowing for an average of \$0.41 per gallon for tariffs, handling and delivery to most areas, **the average current retail price is roughly \$0.92/gal.** Larger accounts can often negotiate a lower price agreement by as much as \$0.05/gal., or more.

To follow Mont Belvieu spot pricing https://ycharts.com/indicators/mont_belvieu_propane_spot_price.

For an update on FMCSA motor carriers emergency waivers for COVID-19 go to <https://www.fmcsa.dot.gov/COVID-19> □



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Robotics to Replace Manual Labor in Packing and Processing Plants

Jul 13, 2020 in www.Chick-News.com Editorial by Simone M. Shane

Long before the advent of COVID-19, the red meat and poultry industries were experiencing problems in recruiting and retaining labor to perform physically demanding manual and repetitive work. The virtually unending supply of immigrant workers, from beyond our Southern border and from areas of world conflict, together with our indigenous poor, staffed plants and maintained production at plant capacity.

It became evident at the turn of this century that expansion of red meat packing plants in the Midwest would be limited by the availability of labor willing to work long hours under stressful conditions for relatively low pay. This is evidenced by an annual employee turnover in meat processing plants ranging from 40 to 70 percent compared to 30 percent for all manufacturing activities according to the Boston Consulting Group. Increasing pressure on the Federal government to ensure that foreign workers were eligible for employment on special non-immigrant visas facilitated recruitment. In southern states, chicken plants had less problems than the Midwest red-meat facilities due to greater mechanization and a fortunate availability of resident rural non-unionized U.S. minorities and legally employable and sometimes undocumented Hispanics.

Traditionally U.S. processors have relied on manual labor based on availability and relatively low cost. Efficiency of workers in deboning and cut-up has disfavored the introduction of technology to perform similar tasks to humans who achieve higher yields.

In the EU, where labor costs are relatively higher compared to the U.S., despite the availability of Eastern European workers and African migrants, robotics is used in many applications. Packers and processors recognize the return on investment from robotic processing with more sophisticated machines achieving similar yields compared to manual workers. Within the last five years, laser guided cutting, and machine vision have been applied in many areas of first- processing and subsequent portioning, deboning and packing. More sophisticated end-of-arm tools, including soft grippers, are now capable of handling raw meat and poultry. When combined with machine vision and AI robotic installations can evaluate weight and quality and assign product to designated packing lines.

The difference between the U.S. and the EU was clearly defined in an article by Jacob Bunge, who is emerging as a incisive agricultural reporter and his colleague Jesse Newman in the July 10th edition of *The Wall Street Journal*. Bunge notes that domestic protein companies recognized the need for robotic processing over ten years ago. Tyson Foods, responsible for at least 20 percent of meat production, through its involvement in pork and beef packing and integrated broiler production, has invested over \$500 million in technology and automation since 2017. The company established the Tyson Manufacturing Automation Center in August 2019 to advance mechanization and replacement of manual labor. Dean Banks, recently appointed as president of Tyson Foods after serving on the Board of Directors since 2017, has a background in technology, previously serving in a subsidiary of Google, to advance a systems approach to processing. JBS S.A. of Brazil a large multinational purchased Scott Technology Ltd, a robotics manufacturer in New Zealand in order to apply their innovations across their entire spectrum of beef, pork, and chicken companies worldwide. JBS S.A. had planned capital expenditure of \$1 billion for plant upgrades with a large proportion devoted to automation and robotics.

And then came COVID!

Through May of this year, it is estimated that close to 20,000 meat and poultry workers in 29 states have contracted COVID-19 with at least 100 confirmed fatalities. Approximately 30 major plants were either closed or were operated at a volume lower than capacity, reducing the output of pork and beef in March and April, extending into early May. Although processing rates have returned to within 95 percent of pre-COVID levels, cases are still emerging in plants and the communities in which they are located. This is despite the investment of money, resources and time into preventive measures. These include personal protective clothing and equipment (PPE), barriers between work stations, intensified cleaning, installation of dry hydrogen generators, social distancing and a rigorous program of testing with quarantine of infected workers. In the absence of an effective vaccine, there seems to be no end to the problem of circulation of COVID-19 among plant workers. They are required to work in close proximity concentrated in limited areas and working at low temperature and high humidity frequently with defective air filtration or circulation.

The USDA estimates that meat processing involves a density of 3.2 workers per 1,000 square foot of work space. This compares to approximately 1.7 workers for food processing and packaging and less than one worker per 1,000 square feet for textiles, paper, and chemical industries. Although prior to the advent of COVID-19, worker injuries were reduced to a level of 4.3 accidents or illnesses per 100 full time workers, in 2018 the red meat industry functioned at approximately twice the level of the national average, according to the Bureau of Labor Statistics. The U.S. Government Accountability Office maintains that the number of injuries is underreported among the almost 600,000 employed in meat packing and chicken processing plants.

Milane Haboon of *Soft Robotics* noted that robotic processing may contribute to lower rates of foodborne infection, since on-line workers have limited contact with food products. Concern over COVID-19 in processing plants is evident by the recent action taken by the General Administration of Customs of the Government of China in banning specific plants, including various JBS red meat facilities in Brazil, an Arkansas chicken plant operated by Tyson Foods and the Tonnies plant in Germany where high rates of COVID-19 have been recorded.

continued on next page

Robotics to Replace Manual Labor in Packing and Processing Plants *(continued from previous page)*

It is enigmatic that unions representing red meat workers have demanded increased protective measures and benefits for plant workers but are naturally opposed to robotics and mechanization. This is understandable given that their income in the form of dues relies on large numbers of relatively low-paid workers. The trend towards replacement of manual labor with robotics will inevitably reduce the influence of unions that exert their power through fear of organized slow downs or strikes.

The major packers and processors recognize that robotics has the potential to reduce the interrelated problems of recruitment and conforming to Department of Homeland Security regulations governing employment of foreign workers. Robots do not demand increases in wage rates that currently are in the vicinity of \$16 to \$18 per hour for workers, do not take holidays, and are immune from injury or illness.

The question faced by packers and processors is the extent to which they can achieve a return on capital invested in mechanization and robotics compared to the direct and indirect cost of labor, taking into account the relative yields obtained from alternative systems. COVID-19 may be here to stay despite the probability of vaccination. Plant slow-downs and closures and litigation over liability will become operating constants. The disease has created a new imperative to reevaluate both sides of the cost to benefit equation that may well favor mechanization and robotics given the radically and possibly permanently changed operating environment. □

Automation prepares the supply chain for the next pandemic

August 7, 2020 in [WattAqNet.com](#) by Elizabeth Doughman

Poultry producers and processors are fast-tracking robot and automation technologies to help reduce the risk of exposure among workers during COVID-19 and potential future pandemics.

[Click here for full article](#) □

Line speeds become a cause in the coronavirus pandemic era

August 4, 2020 in [FoodSafetyNews.com](#) by Dan Flynn

Line speeds for those with waivers from USDA's Food Safety and Inspection Service don't increase the speeds all that much, but the issue has reached celebrity status thanks to COVID-19.

In the last month, however, line speeds for meat and poultry products are being blamed by the union representing 250,000 meatpacking and food plant workers as key to the pandemic deaths experienced by the industry. To be sure, the United Food and Commercial Workers Union opposed line speed increases long before it had any knowledge of the deadly coronavirus that was not a threat in the U.S. until 2020.

Those faster line speeds are now being challenged on multiple fronts by UFCW with stepped-up action in federal courts and legislative moves in both the House and Senate.

Bills calling for "Safe Line Speeds" in both the House and Senate make it sound as if it is certain that line speeds contributed to COVID-19 cases in the meat and poultry industries.

Speed limits on poultry were eased by the Obama Administration and the Trump Administration followed up last year by lifting them from swine slaughter. Elimination requires waivers.

UFCW with backing from the Public Citizen Litigation Group has also sued in federal court to end the waivers of line speed limits.

As many as 30,000 or more meat and poultry workers have contracted COVID-19 and more than 168 have died. But whether faster line speeds, if they existed, can be attributed to any of those illnesses and deaths is an unanswered question.

The UFCW lawsuit claims USDA permitted 53 of 124 chicken processing plants to go with a 175 birds per minute line speed, up from 140. That does not mean all who obtained the waiver run at that speed. The industry has always claimed that line speed depends on numerous factors and vary day-by-day.

Long a subject for dispute between the union and management, line-speed now has entered a new phase because of the coronavirus pandemic. The union says faster line speeds contribute to the COVID-19 spread.

It says the increased line speeds "increase the risk of injury and make social distancing next to impossible." No doubt some communities were "hotspots," contributing to the spread of the virus inside. But would working slower have produced different results?

The National Chicken Council claims there is no evidence to suggest faster lines increased the risk of employees contracting COVID-19. Sen. Cory Booker, D-NJ, and Elizabeth Warren, D-MA, sponsored the bill to make the waivers illegal. Smithfield Foods CEO Kenneth Sullivan told the pair they formed their opinions without speaking to the industry and he finds that "especially disheartening."

Booker said he was introducing legislation "to stop line speeds at poultry plants during this pandemic." Stopping line speeds would mean poultry and meat plants would cease production. □

Poultry Processing Line Speeds

Most of the discussion around poultry line speeds refers to a specific part of the processing line called the "EVISCERATION LINE."

THE EVISCERATION LINE IS HIGHLY AUTOMATED. IN A MODERNIZED PLANT, ONLY 2% OF TOTAL PLANT EMPLOYEES WORK ON THE EVISCERATION LINE.



EVISCERATION LINE
This section of the plant is where the organs are removed and the carcasses are cleaned and inspected.

SECOND PROCESSING
This next section of the plant is where the product is cut up into parts and then packaged.

THIS PART OF THE LINE OPERATES 40% SLOWER THAN THE OTHER LINE.

SAFETY FIRST

Protecting Processing Plant Workers

Employee safety always has been and will always be a priority for the chicken industry.

THE POULTRY INDUSTRY'S INJURY RATE HAS FALLEN 84 PERCENT.

84%

INCREASED LINE SPEEDS OF UP TO 175 BIRDS PER MINUTE HAVE BEEN TESTED AND PROVEN SAFE FOR 25 YEARS.

25 YEARS

POULTRY PLANTS ACROSS THE GLOBE OPERATE THE SAME EQUIPMENT SAFELY AT OVER 200 BIRDS PER MINUTE.

200 BPM

For tasks performed in tandem with workers across from one another, partitions can be positioned to ensure the safety of workers while allowing the pass-through of products.



USDA INSPECTORS are in every plant, monitoring the processing line to ensure the chicken you eat is safe and meets U.S. Department of Agriculture (USDA) safety standards.

WHAT ARE POULTRY PROCESSING LINE SPEEDS?

Poultry line speeds refer to how many birds per minute (BPM) are processed.

LINE SPEEDS ARE DETERMINED BY MANY FACTORS...

- Staffing availability, both of employees and USDA Inspectors, in the plant
- Equipment capacities
- Line layout
- Work space size
- Processing line configuration
- Consumer demand/need
- USDA's Food Safety and Inspection Service (FSIS) regulations, which vary by each plant

ALL OF THESE FACTORS, AND MORE, MUST BE IN PERFECT BALANCE FOR SAFE OPERATING SPEEDS.

Four Things You Need to Know about ‘Poultry Line Speeds’

July 28, 2020 in [PoultryProducer.com](https://www.poultryproducer.com)

Employee safety always has been and will always be a priority for the chicken industry. Chicken processors continue to focus their efforts on preventing workplace injuries by implementing ergonomics and medical intervention steps, while continually introducing new technology and automation in the workplace. These efforts are showing positive results, demonstrating the vast advancements the industry has made in improving employee safety.

One topic of interest is the pace of the chicken processing line, commonly referred to as “poultry line speeds.” Here are four things you need to know about poultry line speeds in a chicken processing plant:

1) When you hear or read about poultry line speeds, what is being discussed is known in the industry as the “evisceration line.” The evisceration line is the part of the plant where the birds’ organs are removed and the carcass is cleaned, washed, and inspected. This part of the process is highly automated, and it is not the part of the plant where the birds are slaughtered or where workers cut up and debone the chicken for packaging. Due to advanced machinery and technology, **there are very few workers** stationed in this section of the plant. The part of the plant where there are more workers who cut up and package the chicken typically operates at **one-fifth of the speed** of the evisceration line.

2) Poultry line speeds are regulated by the United States Department of Agriculture (USDA). Line speeds are based on many factors, including a plant being able to maintain process control, producing safe food, keeping workers safe, and staffing considerations. If a plant determines that one of these factors calls for slowing down the line, the plant will do so. USDA has the regulatory authority to slow down or stop a production line in poultry processing plants if deemed unsafe.

3) Increased line speeds of up to 175 birds per minute (175) have been around for 25 years. A pilot program using almost two dozen chicken processing plants was initiated under the Clinton administration allowing line speeds of up to 175 bpm. The modernized system has been studied, debated, and reviewed in depth for more than two decades to assure its effectiveness in further modernizing chicken inspection while improving food safety and protecting workers. In fact, while the industry has been safely increasing line speeds over the past 25 years, [the poultry industry’s injury and illness rate has fallen 84 percent](#), according to the Department of Labor.

4) There is no evidence to suggest evisceration lines operating at 175 bpm increases the risk of an employee contracting COVID-19. The line speeds in question are a part of the line that is almost entirely automated in poultry processing. Regardless, the virus does not discriminate based on line speed. Whether plants are operating at 125, 140 or 175 bpm, plants have taken every precaution to help keep workers safe, including: social distancing, temperature checks, installing plastic barriers between work stations where social distancing is challenging, providing masks, face shields and gloves for workers, staggering shifts, making breakrooms available outside, multiple hand sanitizing stations, extra cleaning and sanitation of the plant, educating employees about steps to take at home to keep healthy, encouraging sick or vulnerable employees to stay home with paid sick leave, and testing for the virus. □

NCC announces new video focused on poultry line speeds

NCC this week posted a new video that highlights the facts about poultry line speeds and outlines the measures chicken plants have taken to keep employees safe during COVID-19. You can watch the video [here](#). □

COVID-19 Update: Labor pains for meat processing industry

August 17, 2020 in [MeatPoultry.com](https://www.meatpoultry.com) by Lukas Southard

The coronavirus (COVID-19) pandemic has challenged meat packers, and the workers who keep the country’s meat and poultry processing lines moving, perhaps more than any other manufacturing industry.

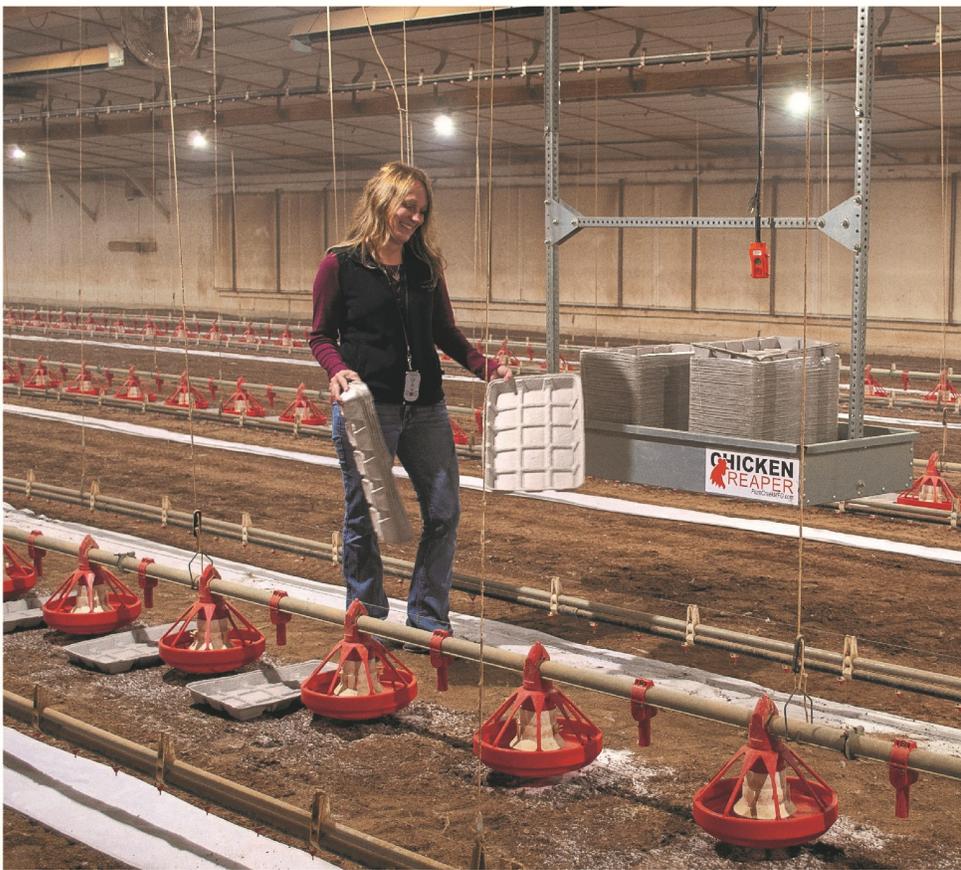
As the virus has moved slowly out of some of the early hotspots in densely populated urban areas, it has spread into rural areas that support most of the country’s food manufacturing. Meat processing plants have seen temporary closures and fast-moving outbreaks of the virus due to the nature of how the work is done. Some packers have had to ramp up hiring and evaluate how to incentivize production staffs to continue to work by providing more testing, safety protocols, and enhancing benefit structures.

Employment numbers in food manufacturing by the Bureau of Labor and Statistics shows the stark change in the job market. In March, the non-farm jobs report showed just 1,500 fewer jobs than February and 17,200 jobs more than March 2019. By April, food manufacturing had lost 86,300 more jobs and another 24,900 in May.

Staffing meat production plants has always been a challenge due to the hard work in often harsh conditions – especially for some of the smaller plants who compete with the larger packers, said Chris Young, executive director of the American Association of Meat Processors, Elizabethtown, Pa.

“With the pandemic, it has become a greater challenge because we are much busier, so the job hours have become longer in the same conditions,” he said. “One of the big challenges is also competing with the generous unemployment compensation that is in place now. Nobody wants to come back to work and are willing to wait until the unemployment runs out.”

[Click here for full article](#) □



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Swarms of locusts to become chicken feed

June 19, 2020 in [PoultryWorld.net](https://www.poultryworld.net) by Natalie Berkhout

Enormous swarms of locusts – about 60 million insects – have caused major devastation to crops and livelihoods in countries in East Africa, Asia and the Middle East. Scientists in Pakistan have come up with a way to turn these critters into chicken feed.

Despite control operations, the recent heavy rains have created the ideal conditions for the pest’s reproduction in several countries. Young juveniles will become voracious adults as farmers begin to harvest, compounding an already bleak food security situation. “The locusts, combined with the impacts of Covid-19, could have catastrophic consequences on livelihoods and food security,” says director-general of the Food and Agriculture Organization of the United Nations (FAO), QU Dongyu, adding, “Our gains have been significant, but the battle is long and is spreading to new areas.”

The locusts, combined with the impacts of Covid-19, could have catastrophic consequences on livelihoods and food security.” – FAO

[Click here for full article](#) □

China Proposing to Export Ducks to Pakistan to Destroy Locusts

June 26, 2020 in [Egg-News.com](https://www.egg-news.com)

In what may be regarded as an exercise in hair-brained diplomacy, officials in China are investigating the feasibility of exporting 100,000 ducks to Pakistan to destroy locust swarms.

The question is whether ducks would survive under desert like conditions in Sindh and Punjab provinces. A second problem will be that China will effectively export a range of avian influenza viruses by transporting ducks to the affected areas. Locusts swarms comprising millions of insects move rapidly possibly as much as 30 miles in a day depending on wind and air currents. Waddling ducks will not be able to keep up.

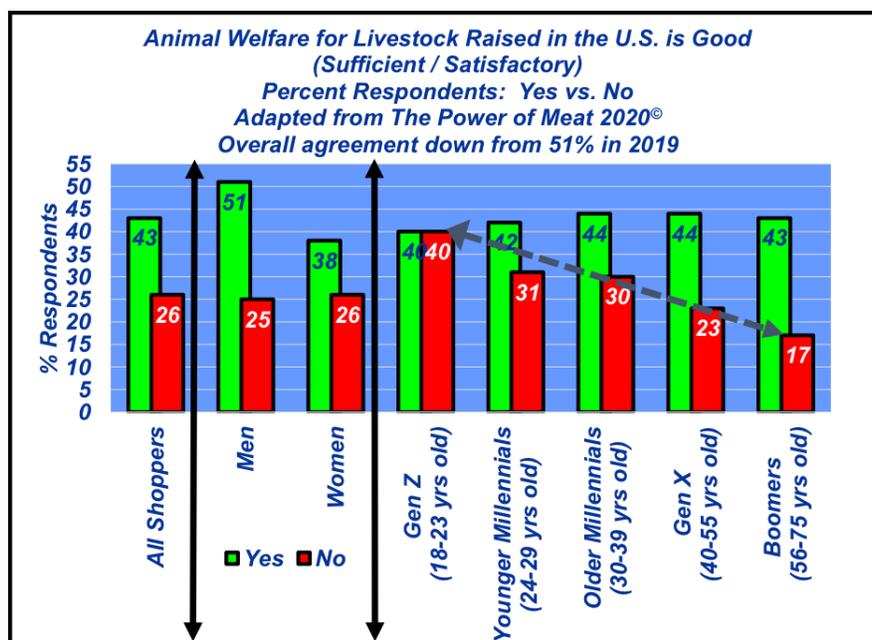
The problem of locust infestation in the Middle East and the Horn of Africa is a consequence of unseasonal rains due to cyclonic conditions in 2019. This resulted in massive multiplication of locusts that initially were not controlled due to lack of coordination among affected nations.

Depredation caused by locusts adds to the problems of COVID-19 in poverty-stricken areas in the Middle East and Africa. Ducks may provide required protein when eaten by Pakistanis but certainly a population of 100,000 ducks from China will make no impression on the locust population and the damage they cause. □

Power of Meat – Consumer perspectives on animal welfare

July 30, 2020 in [BeefMagazine.com](https://www.beefmagazine.com) By Nevil Speer

According to Power of Meat data, only 43% of shoppers think animal welfare for livestock in the U.S. is sufficient.



[Click here for full article](#) □



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Chicken buyers most open to meat alternatives

July 15, 2020 from WorldPoultry.net by Tony McDougal

Poultry farmers are facing increasing pressure from vegetarians and vegans, particularly among the health and environmentally-aware younger generation. Poultry World looks at the issues and the response of the poultry sector.

Consumers from all but 3 countries in the world (North Korea, Vatican City and Eswatini (Swaziland) signed up to the Veganuary movement this year. More than 400,000 people pledged to eat a purely vegan diet during January, marking a considerable rise on figures for the previous two years (250,000 in 2019 and 170,000 in 2018). This has led supermarkets and manufacturers, as well as restaurants and UK pub chains to tap in to the vegan sector and the growing number of 'flexitarians' who still enjoy meat but want to reduce their consumption levels. Fast food chicken restaurant KFC, for example, included its first Veganuary offerings, selling one million vegan burgers globally during the same month. The UK-based Marks & Spencer retailer said its vegan chicken pieces sold at a rate of 4 every minute while Tesco supermarkets reported that sales of Hellmann's vegan mayonnaise soared by nearly 400% during January 2020.

Increasing number of consumers turn to veganism

Retail insight company Kantar said it was clear that UK retailers were prepared for an increasing number of consumers to turn to vegan foods. Co-op food retailer launched its new product line 'Gro', while the Asda supermarket chain promoted its 'Plant Based' foods. It reported that more than twice as many consumers bought one of its explicitly labelled plant-based products in January compared with the festivity-filled month of December 2019.

Estimates show that anything from 3-10% of the population are non-meat eaters.

Reasons why consumers move to veganism

But what are the reasons for people getting involved in Veganuary? Health was cited by nearly 42% of participants, followed by environmental concerns (28%) and ethical reasons (27%). Nearly half the people giving up meat and dairy in January did so because they perceive it as a healthy choice. However, the plant-based food boom is not primarily caused by a rise in the number of people following strict vegan diets – vegans still make up only 2% of the population. Instead the trend is being driven by many people making small changes and trying to eat more plant-based meals.

3-10% of population non-meat eaters

Paul Kelly, managing director of UK-based FarmGate Hatcheries, admitted that vegetarian and vegan diets were on the increase among the younger generation and students. But he felt that other environmental issues perhaps loomed larger. Writing to the hatchery's poultry customers, Kelly said: "Estimates show that anything from 3-10% of the population are non-meat eaters. I do not think this will affect the top end of the market as the decision maker on Christmas lunch tends to be from the older generation. Turkey will continue to take center stage – with a nut roast alongside."

"Plastic and non-recyclable packaging is a 'big no' and I believe will become a major issue very quickly," he added. Whole birds continue to dominate Kelly Turkeys' own sales – remaining at 72% of FarmGate sales over the past 4 years. FarmGate sales were up by 8.5% and online sales by 7.5%, with the move to ordering from smart phones and tablets rising dramatically. Late orders – after 14 December – made up 12% of sales.

Among those who do not currently consume plant-based protein, chicken buyers are most open to consuming this type of protein (20%). More than 5 in 10 said their ideal meals would consist of more plant-based foods. In reality, however, fewer than 10% of buyers of each meat protein had purchased plant-based foods in the past 6 months. While the growth of plant-based protein is small, its development could create headwinds for animal protein producers and meat producers. Dubois noted the need to introduce blended options to satisfy this craving. Others think that the plant-based meat that is already here – the Beyond Burger and the Impossible Burger – will become more widely available. Bruce Friedrich of the Good Food Institute, which works to develop alternatives to meat, predicts a widening of the consumer products on offer. Speaking to the Guardian newspaper, he said: "We'll have plant-based meat that doesn't exist yet, whether it's pork chops, steaks, tuna or salmon."

Future of meat based protein

Whether plant-based or lab-based meat (also referred to as cultivated meat) takes off remains to be seen. US start-up JUST has created chicken nuggets in a bioreactor and scientists at the University of Bath are growing bacon on blades of grass. Statistics don't at present support any massive change in the protein rich poultry sector by 2050. But Friedrich, at one end of the spectrum, believes otherwise: "There won't be factory farms or abattoirs in 2050. There will be some heritage breed farms and slaughterhouses where animals are treated well. But it will be a limited market." □

Petri-dish proteins continue to push forward during pandemic

July 27, 2020 in BeefMagazine.com by Amanda Radke

Hang onto your cowboy hats — cell cultured proteins are coming to a meat case and retailer near you soon!

[Click here for full article](#) □

Impossible Foods' mission to make meat obsolete (blog)

June 26, 2020 in WattAgNet.com by Roy Graber

Impossible Foods CEO Patrick Brown recently made the bold statement to CNBC "Mad Money" host Jim Cramer that his company's vision is to have plant-based protein products "completely replace the animal-based products in the food world within the next 15 years."

[Click here for full article](#) □

2019 retail sales of plant-based meat total \$939 million

June 9, 2020 in WattAgNet.com by Elizabeth Doughman

Sales of plant-based proteins in retail grew to \$939 million in 2019, resulting in more than 208 million units sold, according to a new report from the Good Food Institute (GFI).

[Click here for full article](#) □

McDonald's Pulls The Plug On P.L.T.

July 2, 2020 in Drovers.com by Greg Henderson

Plant-based products are no longer on the menu at McDonald's in Canada, but the end of the test has not diminished the enthusiasm of leaders of the fake meat business.

[Click here for full article](#) □

Impossible Burger hits Walmart meat case

July 31, 2020 in MeatPoultry.com by Kimberlie Clyma

The plant-based protein will be sold in 12-oz packages in more than 2,100 Walmart locations.

[Click here for full article](#) □

The UN vegan bomb that recently exploded (blog)

August 3, 2020 in WattAgNet.com by Benjamin Ruiz

On a quiet July 25, which might have been just like any other Saturday, the United Nations dropped a bomb, tweeting this: "The meat industry is responsible for more greenhouse gas emissions than the world's largest oil companies. Meat production contributes to the depletion of water resources & leads to deforestation."

[Click here for full article](#) □

PLT Health Solutions introduces textured pulse protein

June 25, 2020 in MeatPoultry.com By Sam Danley

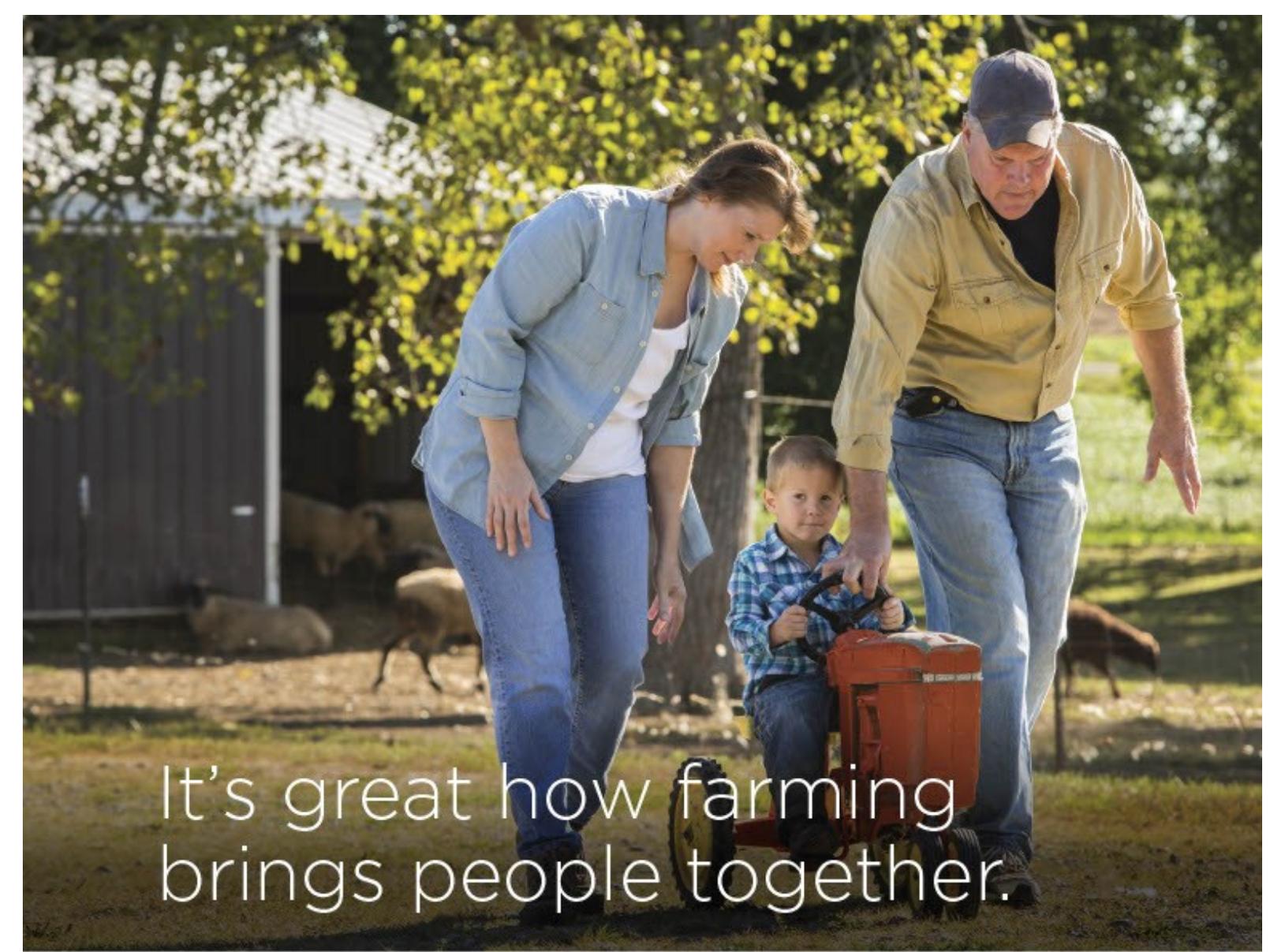
PLT Health Solutions and its manufacturing and technology partner Nutriati LLC introduced Artesa Textured Pulse Protein for meat analogue solutions.

The ingredient, a combination of Nutriati's Artesa Chickpea Flour and yellow pea protein, is suitable for applications ranging from hamburgers, meatballs and pizza topping to chicken, fish and pork products. It offers developers more reproducible results in meat analogues, along with formulation predictability, cleaner labels and a more "meat-like" experience, the companies said.

"Industry demand for ingredient solutions is growing exponentially," said Devin Stagg, chief operating officer at PLT Health Solutions. "At the same time, we're all trying to create a better 'meat replacement' experience. We want every consumer who tries a plant-based meat product to say 'yes' and come back for more."

Artesa Textured Pulse Protein may be used as a standalone ingredient in meat analogues and may enable the development of plant-based meat products without other texturizers, binders or emulsifiers, eliminating the need for ingredients like egg whites, wheat gluten and methylcellulose.

"Artesa Textured Pulse Protein is the result of several years of research and development by Nutriati's Culinary Team working with plant-based meat producers creating comprehensive solutions to improve manufacturability and finished product quality," said Michael Spinelli, founder and chief innovation officer at Nutriati. "In a number of cases, we have been able to improve existing formulations and nutrient content while removing ingredients and cleaning up labels." □



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Redefine Meat unveils Alt-Steak using 3D meat printing

June 30, 2020 in MeatPoultry.com by [Bob Sims](#)

TEL AVIV – Redefine Meat will now begin to market test its plant-based product, Alt-Steak, at premium restaurants later this year. The company created Alt-Steak with patent-pending 3D meat printing technology. The 3D printing allows for large volume production at a cost that enables large-scale market launch.

Redefine collaborated with taste expert Givaudan, butchers, chefs and food technologists to digitally map over 70 sensorial parameters into Alt-Steak products including the texture, juiciness, fat distribution and mouthfeel of premium beef cuts. The proprietary 3D food printers create the products layer by layer using the company's Alt-Muscle, Alt-Fat and Alt-Blood plant-based formulations. The process of printing with multiple materials gives Redefine Meat the ability to create sustainable, high-protein, no-cholesterol steaks.

"Since day one of the company, we have been working on creating a tasty and affordable plant-based alternative to steaks, one of the most cherished food products and the driver of the entire meat industry," said Eshchar Ben-Shitrit, chief executive officer and co-founder of Redefine Meat. "To enable mass adoption, we knew that creating an alternative meat product that was both high in quality and nutritional composition would require new technologies and production processes never seen before in the food industry. Today's announcement marks the start of a new era in alternative meat – the Alt-Steak era – driven by production processes that will accelerate the development of a wide range of alt-meat whole muscle products and create a sustainable alternative to raising and eating animals.

"The importance of using precision 3D printing technology to achieve texture, color and flavor – and the combinations between them – cannot be overstated," Ben-Shitrit added. "By using separate formulations for muscle, fat and blood, we can focus on each individual aspect of creating the perfect Alt-Steak product. This is unique to our 3D printing technology and lets us achieve unprecedented control of what happens inside the matrix of alt-meat. Collaborating with an industry-leader like [Givaudan](#) has led to the creation of an Alt-Steak product that is not only healthy and sustainable, but also offers the satisfying flavors, textures and aromas of eating actual meat."

A small number of leading chefs and restaurants will test Redefine Meat's Alt-Steak products later this year. The company will then incorporate the feedback received from the testing and ramp up 3D printing ahead of distribution in 2021. □

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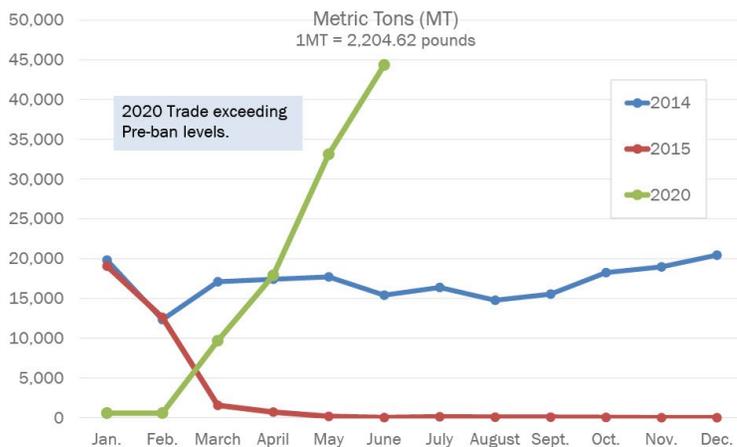
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Chinese Imports of U.S. Poultry: 2014, 2015, & 2020



Fake Meat Companies Fight Each Other

August 29, 2020 in *The Ag Watchdog*

This week, the fake meat company Lightlife (owned by Maple Leaf Foods) called out Beyond Meat and Impossible Foods in [an ad](#) in the Wall Street Journal and New York Times, arguing they should reduce their use of ultra-processed ingredients. "Enough with the hyper-processed ingredients, GMOs, unnecessary additives and fillers, and fake blood," the ad reads. Impossible Foods [responded](#) by calling it a "disingenuous, desperate disinformation campaign." □

In a presentation to TDA on Aug. 3rd given by Dr. Andrew Muhammad, Ag Economist at UTIA, he shared the graph to the left and details regarding exports to China.



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TPA Member Poultry Facilities Recognized for Exceptional Safety Performance

USPOULTRY – Aug. 12, 2020 – The Joint Industry Safety and Health Council recently recognized 215 chicken and turkey facilities with safety awards. The companies were honored in recognition of their outstanding performance through the implementation of innovative and effective employee safety and health programs.

Award consideration was based on injury statistics over three years (2017 - 2019) and an evaluation of written applications by academia and other safety experts. Sixty-one facilities received the highest level of recognition, "Award of Distinction." The other categories include "Award of Honor" and "Award of Merit."

The Award of Distinction honors facilities for sharing the essential aspects of safety and health training, education and employee involvement and have incurred injury and incident rates equal to or greater than 75 percent less than Bureau of Labor Statistics (BLS) results. The Award of Honor honors facilities based on the same essential aspects but with incident rates between 75 and 50 percent less than BLS results, and the Award of Merit honors facilities that have incurred injury and incident rates between 50 percent and equal to BLS results.

Based on the latest data available from the BLS, the slaughter and poultry processing Occupational Safety and Health Administration (OSHA) total recordable illness and injury rate for 2018 was 3.5 cases per 100 full-time workers, down from 3.8 in 2017. The poultry industry's rate of 3.5 was below the rate of 5.1 for similar agricultural industries in terms of injuries per 100 full-time workers and lower than the rate of 4.2 for the entire food manufacturing sector, while all of manufacturing was 3.4.

Congratulations to the following TPA member companies for their respective recognitions!

Award of Distinction

Koch Foods Morristown Processing
Pilgrims Chattanooga Processing

Award of Honor

Cobb-Vantress –Lafayette, TN Hatchery
Tyson Foods – Albany, KY Processing
Tyson Foods – Decherd, TN Hatchery
Tyson Foods – Union City, TN Processing

Award of Merit

Cobb-Vantress – Dry Creek Pedigree Farm

□

Stress is nothing to mess with, folks: 5 steps for connecting with each other in troubled times

June 23, 2020 in PoultryHealthToday.com by Tom Tabler, PhD

I read with great interest the [article](#) by Larry Rueff, DVM, about the effects of COVID-19 on the folks that grow and process our food. It hit close to home.

The article got me to thinking about just how fragile things are — not just in the chicken business but the people business as well. Much like our animals, there are folks who need a little checking on right now.

Let me regress a bit first and tell you about three experiences that have played a large part in who I am today and explain how I relate them to the COVID-19 pandemic.

My dad used to buy feed for our milk cows in 100-pound cotton sacks. The sacks had pretty designs, and for years, my mom used them to make shirts for my brothers and me. I got compliments because the shirts were so pretty, but I also got my share of teasing from kids at school once they learned my shirts were once feed sacks. The teasing had a big effect on me. It was painful at the time, but I figured out how to get along with just about anybody, including people who gave me a rough time.

A second memorable experience occurred in college. I had a speech teacher who recognized I was a loner and introvert. She told me I could be a loner all I wanted but that if I was to get along in this world, I'd better learn how to act like a grouper or life was going to be tough. That teacher was right. She also taught me a lot about reading people, watching for signs and recognizing when something isn't quite right.

Here's the third experience that had a huge impact on me. After I got out of college, I worked as a broiler service technician. I got to know a grower who had a nice farm, a wonderful wife and kids that were about my age. He was a good grower, not on top all the time but way better than average. He was also a serious worrier, as am I. A few years later, after servicing chickens was in my rearview mirror, I learned this grower left his house one morning, went out to the barn and hanged himself from one of the rafters.

Raw emotion

I've never forgotten these three situations, and although I don't dwell on them, the COVID-19 pandemic has prompted me to revisit them.

Farming is not an easy occupation, and as Dr. Rueff indicates in his article, not all stories end happily. The raw emotion and the heart and soul farmers devote to their profession — and the toll that their devotion and profession takes — is difficult for anyone outside farming to comprehend.

We are all trying to find our way in a world that did not exist 6 months ago. It's a struggle. It's stressful. And it's harder for some of us than for others. I say all that to say this: We all have got to look out for each other right now and watch for signs. If you see something that's a half bubble off plumb, say something. None of us want to see our animals suffer. Neither do we want to see our family, friends, neighbors or fellow farmers suffer. We check on our animals to keep them safe; let's check on each other to keep us safe as well.

Managing stress

Stress is nothing to mess with, folks. And some of us just aren't very good at taking care of ourselves and may need a little help. There's nothing wrong with that. We are making things up as we go right now. It's stressful on everyone, but there are ways to deal with stress.

Here's an adaptation of the Managing Rural Stress Model from my friends at the University of Arkansas Cooperative Extension Service¹:

Managing Rural Stress Model

Step 1: Assess needs and stressor impacts

- How big is the stressor?
- What needs become necessary (more income, sleep, etc.)?
- How manageable is the impact (not at all to no problem at all)?

Step 2: Identify and access resources

- What resources are available?
- Categorize these resources — personal, material, etc.
- Effective use and recognition of resources

Step 3: Pursue good-quality decisions

- Gather information
- Assess options
- Discuss key decisions with others
- Clarify goals
- Be open to change

continued on next page



Stress is nothing to mess with, folks: 5 steps for connecting with each other in troubled times

(continued from previous page)

Step 4: Connect with support sources

- Assess support options
- Informal — family, friends
- Formal — faith, professionals, other
- Be willing to approach others for support (this may be tough, but you must be tougher)

Step 5: Use effective coping strategies

Rest and renew yourself

- You can't care for your farm or your family very well if you don't care for yourself
- Lean on sources of personal renewal that you value (faith, nature, music, fishing, etc.)
- Build in "rest breaks" daily/weekly
- Connect with those who give you strength, love and support

Healthy communication

- Be willing to share your stresses/concerns with others
- Talk/share with others who understand or who you trust
- Listen to and support one another
- Avoid withdrawal or anger

Focus on relationships

- Reassure family members of your love and commitment (they're stressed right now, too)
- Work through conflicts
- Follow consistent family routines that offer security, such as family meals together

I have faith and believe we will work through COVID-19. I also believe that, for many of us, other people have recently become more important than material treasures, and that's a good thing. I tend to wear my heart on my sleeve, and I believe that when this is all over, my family, my friends and the relationships I have with folks across the poultry, beef and pork industries will be even more dear to me than they are now or were 6 months ago. We take a lot of things for granted in this country that we shouldn't, not the least of which are our fellow human beings. Everyone, please stay safe, take care of yourselves and look out for each other. We are all stronger together than any of us are alone. And please, please, please realize that things are never as bad as they seem, that you are loved and needed, and that help is always available.

¹Simon R. 2020. *Farmers and stress: COVID-19 adds fuel to the fire*. Univ of AR Coop Ext Ser. Available at: <https://www.uaex.edu/life-skills-wellness/health/covid19/farmers-and-stress.aspx>. □



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Farm Safety: Climbing Feed Bins Safely

June 5, 2020 by Allen Reynolds- Southland Organics

Poultry farmers already know that climbing feed bins can be dangerous. In fact, accidents that happen on farms across the world are most attributed to slips, trips and falls. Jason Jackson shares some helpful tips to ensure you and the people you work with stay as safe as possible when working on bins.

[Click here for full article and to watch the video](#) □



COMMODITY REPORT

August 28, 2020 in Chick-News.com

- ◆ The financial and economic implications of the COVID-19 pandemic continue but will gradually ease as society returns to a "new normal" despite a recent serious upsurge in cases.
- ◆ Corn and soybeans rose significantly this week on orders booked by China, the August 10th *derecho* storm and lower projections for 2020 crop yields developed from the Pro Farmer 7-state Tour.
- ◆ Since July 10th year-to-date exports and 2020/2021 market year orders for corn have attained 6.23 million metric tons [245.4 million bushels]. Exports and orders for soybeans amounted to 8.26 million tons (303.0 million bushels).
- ◆ Prospects for commodity exports to China for the 2020/2021 market year beginning September 1st have improved. China has adjusted their domestic short-term demand for soybeans as a result of stabilization of the hog herd after severe losses in 2019 and early 2020 from African swine fever. White-feathered chicken production has now recovered after COVID disruptions and QSR demand. China is also taking advantage of shipping rates that are rising

The following quotations for September and August delivery were posted by the CME at 13H00 on August 28th compared with values posted on August 21st (in parentheses) reflecting specified months for delivery.

COMMODITY		
Corn (cents per bushel)	Sept. 344 (327)	Dec. 357 (341)
Soybeans (cents per bushel)	Sept. 947 (900)	Nov. 948 (904)
Soybean meal (\$ per ton)	Sept. 302 (290)	Dec. 310 (297)

Changes in the price of corn, soybeans and soybean meal over five trading days this past week were:-

COMMODITY CHANGE FROM PAST WEEK

Corn: Sept. quotation up 17 cents per bushel (+5.2 percent)

Soybeans: Sept. quotation up 47 cents per bushel (+5.2 percent)

Soybean Meal: Sept. quotation up \$12 per ton (+4.1 percent)

For each 10 cent per bushel change in corn:

- ◆ The cost of egg production would change by 0.45 cent per dozen
- ◆ The cost of broiler production would change by 0.25 cent per pound live weight

For each \$10 per ton change in the price of soybean meal:

- ◆ The cost of egg production would change by 0.44 cent per dozen
- ◆ The cost of broiler production would change by 0.25 cent per pound live weight

[Click here for full article](#) □

Derecho Damage Begins to Unfold: Estimated 37.7 Million Acres of Farmland Impacted

August 16, 2020 in FarmPolicyNews.com by Keith Good

Reuters writer Tom Polansek reported on Friday that, "A storm packing hurricane-force winds on Monday impacted 37.7 million acres of farmland across the Midwest, including 14 million in Iowa, the Iowa Soybean Association said on Friday, citing estimates from the U.S. Department of Agriculture.

[Click here for full article](#) □

Effect of Transport Distance and Climate on Broilers

September 1, 2020 in PoultryWorld.net by Natalie Berkhout

Research conducted in Brazil evaluated the temperature, relative humidity and ECI-enthalpy comfort index of commercial loads of broiler chickens at distances of 15 km and 90 km in the summer and winter (rainy and dry) seasons and their effects on body weight difference, mortality and bruising prevalence.

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N. Carolina's Property Protection Act violates 1st Amendment

June 16, 2020 in [FoodSafetyNews.us](https://www.foodsafetynews.com) by Dan Flynn

North Carolina's 5-year-old Property Protection Act, the first state law to use civil action rather than criminal law, to discourage undercover animal welfare investigations, contains unconstitutional elements. Chief Judge Thomas D. Schroeder, of the U.S. District Court for North Carolina's Middle District, has found as unconstitutional, the state's Property Protection Act that was passed by the North Carolina General Assembly in 2015 over the veto of then Gov. Patrick McCrory.

[Click here for full article](#) □

Technology verifies antibiotic-free poultry label claims

July 30, 2020 in [WattAgNet.com](https://www.wattag.net) by Elizabeth Doughman

Platform uses lateral flow to test meat products for the presence of seven drug families.

A new approach rapidly tests for the presence of antibiotics in poultry and other meat products, enhancing food transparency and authenticating brand label claims.

"Until now, you could claim you didn't know what is in the poultry you produce. Because it was too hard to know. Testing solutions for 'antibiotic-free' and 'hormone-free' labels were just not practical for the modern poultry industry. As a result, those claims were not backed by science and data," Scott Levitan, Marketing of [FoodID](https://www.foodid.com), said.

"People are demanding greater transparency and a stronger connection with their food. People want to know what's in the food they eat. Verification, through testing, can help build trust in label claims," said Levitan

In recent years, a growing number of poultry producers have pledged to go antibiotic-free in response to consumer concerns about the rise in antibiotic-resistant bacteria. A growing number of *Salmonella* and *Campylobacter* strains have become multi-drug resistant, according to a March 2020 report from the European Centre for Disease Prevention and Control (ECDC) and the European Food Safety Authority (EFSA).

The U.S. Department of Agriculture (USDA) requires that all poultry raised for food be hormone-free.

How it works

The platform tests for the seven drug families that represents 95% of the most used poultry and livestock antibiotics and other adulterants that can be administered via food and water. It has been tested in the real world setting at a variety of beef, pork and poultry plants.

"The test kit uses lateral flow which is the same technology used by pregnancy tests. This allows it to work at the speed and scale of the supply chain. It delivers results in near real time – at plant line speeds. It has sufficient sensitivity to detect even low levels of substance," Levitan said.

Consumers value transparency

Transparency has become an important issue in agriculture. Consumers are increasingly interested in learning more about how their food is produced and put a lot of value on package or food label claims.

"We have started rolling out a FoodID label – in partnership with select producers – to provide transparency around our testing program and results. The label is an assurance that the chicken being purchased in the supermarket or the burger being eaten in the fast serve restaurant has been tested. That the claim is not just a 'promise' – but is backed by real testing," Levitan explained. □

New York likely to become third state to ban PHAS in food packaging

July 28, 2020 in [FoodSafetyNews.com](https://www.foodsafetynews.com) By Dan Flynn

A bill to ban the use of per- and polyfluoroalkyl substances known as PFAS, that are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals in food packaging after Dec.31, 2022, is now on New York Gov. Andrew Cuomo's desk.

The bill amending New York's environmental conservation law cleared the New York General Assembly on July 23. If signed into law by Gov. Cuomo, the new law will prohibit anyone from distributing, selling, or offering for sale any food in any packaging containing PFAS chemicals.

[Click here for full article](#) □

USDA to unveil stronger organic enforcement rule

July 15, 2020 in [MeatingPlace.com](#) by [Chris Scott](#)

USDA's Agricultural Marketing Service (AMS) is expected to soon publish amendments to its organic regulations that are designed to strengthen oversight and enforcement of production, handling and sale of organic agricultural products.

The agency said [in a document on its website](#) that the amendments "protect integrity in the organic supply chain and build consumer and industry trust in the USDA organic label." AMS hopes to improve farm-to-market traceability, offer robust enforcement of USDA organic regulations, update labeling of non-retail containers and better calculate organic content of multi-ingredient products, among other topics related to the \$55-billion organic marketplace.

The provisions will apply primarily to grains and produce; cases of fraud have dragged on those markets in recent years. Ranchers and processors who market organic animal proteins, however, will be indirectly affected as they are required to certify that live stock has only been fed with organic feedstuffs.

AMS is inviting comments on the proposed rule once it is formally published in the Federal Register with access to submit responses through the [Federal eRulemaking Portal](#), mail or fax within 60 days of the formal publication of the rules.

The proposed changes are being endorsed by the Organic Trade Association (OTA), which believes the action will transform the oversight and enforcement of organic production worldwide. □

The Ag Watchdog Newsletter

June 13, 2020

[Activist group] Pushes Anti-Meat Poll

A poll commissioned by [an activist group] finds that "52% of respondents think the food industry should focus more on meat-free foods to help reduce shortages" and "half of the respondents don't think the meat industry cares about the health of its workers, and 65% don't think it cares about the treatment of animals," according to [a synopsis](#) by Bloomberg News. The full poll results and questions have not been publicly released, so it's unclear how the questions were framed.

July 4, 2020

Colorado to Ban Non-Cage-Free Eggs

Colorado Gov. Jared Polis has signed legislation that will prohibit the sale of conventionally produced eggs beginning in 2025. The legislation was passed after animal liberation activists [threatened to run a ballot measure](#) that was even more restrictive. The USDA reports that 73% of the egg market is conventional. While some egg producers have been retrofitting barns or building new cage-free housing, at considerable expense, experts [have questioned whether there will be a supply of cage-free eggs](#) in 2025 to satisfy the combination of state sales bans and corporate pledges to go cage-free.

July 18, 2020

KFC Dabbles in 3D

KFC announced that it [has partnered with](#) a Russian company called 3D Bioprinting Solutions. The partnership aims to produce the world's first chicken nugget manufactured with a 3D printer. The Russian company plans to have a prototype this fall. In the US, Eat JUST has been teasing the ability to produce laboratory-grown chicken for market, but [so far has been unable to follow through](#). □

Animal rights activists sue USDA over humane handling of birds at slaughter

August 14, 2020 from the NCC

Two animal rights activist organizations, Animal Welfare Institute and Farm Sanctuary, yesterday sued the U.S. Department of Agriculture in federal court for "failing to require humane handling of poultry at slaughter, resulting in adulterated (i.e., damaged or contaminated) products that violate the Poultry Products Inspection Act (PPIA)." The lawsuit was filed in the US District Court for the Western District of New York by [Harvard Law School's new Animal Law & Policy Clinic](#).

In 2013, AWI and Farm Sanctuary filed a similar petition with FSIS to "use the authority granted to it by Congress to codify poultry humane handling standards into enforceable regulations." FSIS [denied the petition](#).

"Poultry processors consider the welfare of the birds a top priority," noted NCC Senior Vice President of Scientific and Regulatory Affairs Ashley Peterson, Ph.D. "Not only is it the right thing to do ethically, but it does not make economic sense to mistreat the birds.

"USDA's Food Safety and Inspection Service (FSIS) has guidelines and directives addressing appropriate handling of birds under the federal Poultry Products Inspection Act, and chicken processors strictly adhere to their animal welfare guidelines. This whole process is routinely audited internally, by independent third party auditors and by customers. It is monitored on a continuous basis by FSIS inspectors." □

The Complex World of Broiler Breeder Issues

June 2020 in *The Feed* by Boehringer Ingelheim by Donald O. Skinner-Noble, PhD

Many broiler and broiler-breeder traits are easily defined and measured. For example, we can define body weight by the age it is measured and the unit of measurement. Once we've defined the age, nearly any type of scale (or analytical balance) gets the job done. Similarly, egg production can be defined by the length of the production period or egg production from the start of lay. All that is required to measure egg production is good record keeping. Composite traits such as feed conversion ratio, meat yield, or percent hatch of set eggs may require measurement of two things and some math but are otherwise easy to define and calculate. Animal well-being, however, defies a single and simple definition.

Regardless of how we define animal well-being, it is important to understand that animal well-being is evidence based. It is NOT based on our emotions or what we think animals feel. There's a term from the field of animal behavior worth introducing anthropomorphism. Anthropomorphism is giving human thoughts, feelings, or intentions to non-human animals or objects. While saying "the hills are alive with the sound of music" is pretty harmless, saying "these birds feel sad" without any evidence to support that conclusion is just a potentially misinformed and misleading guess. As we observe our flocks, it is important to check our biases and emotional interpretations and focus on evidence.

As we collect evidence of positive animal well-being, another definition is worth introducing umwelt (pronounced oom'-velt). Umwelt is the term used to describe the stimuli an animal can perceive and find relevant of all the potential stimuli it may encounter. As we observe our flocks for evidence of positive well-being, we may observe something which is irrelevant or unperceivable to our birds; or we might miss (or might not perceive) something meaningful to our birds. A common practice in poultry behavior research is to identify individuals in a group by applying spray paint to the wing bows (Skinner-Noble et al., 2005). As long as the spray paint is limited to the wing bows, the social hierarchy ("peck order") of the group is unaffected. If spray paint is applied to the head or neck, the birds perceive that a new member of the group has been introduced, potentially increasing the risk of flock mates injuring the "new" individual while re-establishing the social order (P. B. Siegel, personal communication, Feb., 1991).

Before we discuss the types of evidence, we use to assure our birds' well-being is good, let's attempt to define animal well-being. Let's start with the following working definition: "An animal's well-being is good when it is healthy; has appropriate access to feed, water, space, and fresh air; is neither in physical discomfort nor injured by conspecifics; is not experiencing undue psychological distress; and exhibits growth, reproductive, metabolic, and behavioral characteristics appropriate to the age, sex, and genetic make-up of the individual; given appropriate and accepted management practices."

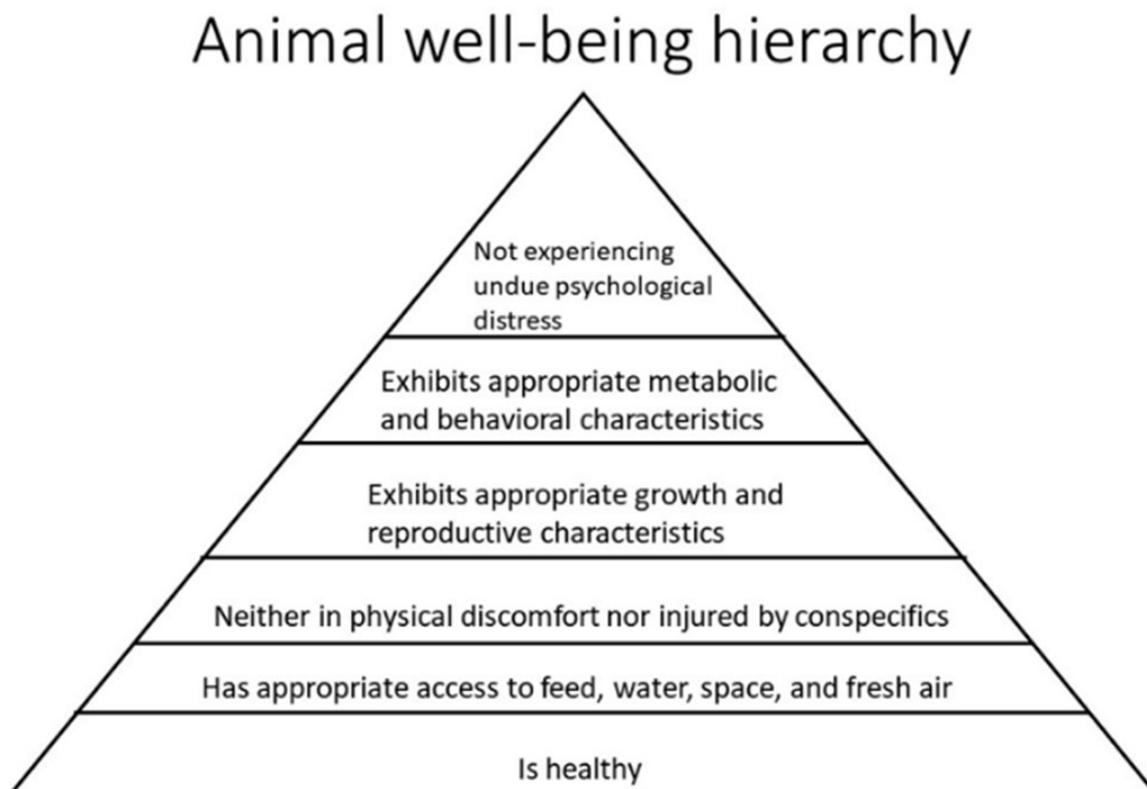


Figure 1: Broiler Vertical Integration: where/when interventions to control *Salmonella* are needed?

continued on next page

The Complex World of Broiler Breeder Issues *(continued from previous page)*

There is much to consider in our working definition. First of all, this definition is a hierarchy (Figure 1). If our birds are sick or dying, their well-being is certainly impaired and none of the other considerations matter. Only when birds are healthy can we consider other factors. Similarly, once birds have appropriate access to feed, water, space, and fresh air, then we can consider their comfort, and so forth.

Our definition refers to “...characteristics appropriate to the age, sex, and genetic make-up of the individual...” and not “natural” characteristics. It is unrealistic to expect broilers to have similar characteristics as their Red Jungle Fowl ancestors after 4,000 years of domestication (Craig, 1981) and a century of intensive selection for broiler traits. It is similarly unrealistic to expect a modern broiler to behave like a modern laying chicken.

WELFARE ISSUES OF BROILERS AND BROILER BREEDERS

When we consider broilers and broiler breeders, we need to recognize that most of the current welfare issues are the result of successfully improving broiler traits over the last century. It is most likely, therefore, that the ultimate solutions to these issues will also be addressed by genetic companies. Two of the leading issues of broiler and broiler-breeder welfare are gait score (ability to walk easily) and issues associated with feed restriction, respectively. Because of intense selection for increased body weight and breast meat yield, the center of gravity for broilers has apparently shifted. Broilers compensate for this shift in center of gravity with altered gait without having negative effects on their well-being (Skinner-Noble and Teeter, 2009).

As early as the 1960's, reproductive issues were observed among broiler breeders (Jaap and Muir, 1968). Since that time, feed restriction of broiler breeders has been shown to prevent the disorders associated with excess feed consumption, and thus excess body weight (Katanbaf et al., 1988, 1989; Shea et al., 1990). When compared to ad libitum feeding, feed restriction may negatively affect some aspects of well-being (Katanbaf et al., 1989; Shea et al., 1990; Mench, 1991), but improve livability and reproductive capability.

It is worth recalling the first level of our well-being hierarchy: health. If we allow broiler breeders unlimited access to feed, we harm their health and increase the likelihood of their death. As an industry, we've decided that being alive (but sometimes hungry) is better for broiler breeders than dying young with a full belly. The currently accepted practice of skip-one-day feeding for broiler breeders appears to optimize survival and flock uniformity while minimizing the negative effects well-being of feed restriction (Skinner-Noble and Teeter, unpublished data).

EVIDENCE OF POSITIVE WELL-BEING

There are three levels at which we can document evidence of positive well-being: daily caretaker observations, manager/supervisor records, and scientific reports. The kinds of things a caretaker can do on a daily basis are: look for evidence of diseases, injuries, and deformities; observe any abnormal behavior patterns (e.g., indications of discomfort or stereotyped behaviors); and watch for normal interactions with caretakers. Any observed differences from “normal and expected” can be investigated (and reported if needed). All the while, the expectation is of proper maintenance of feed, water, and ventilation equipment.

In cooperation with the manager/supervisor, caretakers can maintain records of: proper maintenance of feed, water, and ventilation equipment; appropriate intake of feed and water; appropriate growth and reproductive rates; and appropriate mortality and culling rates. These records require looking for trends or patterns in the data which indicate welfare issues, which may go unnoticed when observed day-to-day.

Behavior patterns can provide information about how individuals spend their time (focal animal observations) or how groups of birds spend their time (scan sample observations). Observations of behavior can include birds' interactions with caretakers. The challenges of collecting behavior data include its time-consuming nature, avoiding observer interference with behavior, need for identification from a distance which doesn't affect behaviors, and the need for a statistical toolbox deep enough to handle data which may not fit a normal distribution. The good news is that it is possible to successfully include behaviors as one of many indicators of broiler and broiler-breeder well-being (Noble et al., 1996; Skinner-Noble et al., 2003; Skinner-Noble and Teeter, 2009).

There are a variety of non-behavior-pattern measures which can help inform our decisions about animal well-being. Tonic immobility (“freeze” reaction to handling) can be used as a measure of fearfulness (Benoff and Siegel, 1976; Noble et al., 1996; Skinner-Noble et al., 2003; Skinner-Noble and Teeter, 2009). The challenges of tonic immobility tests include that they can only be performed once per individual, and they are time-consuming to administer. Metabolic rates can provide a measure of overall physiological activity but require specialized equipment to obtain accurate data (Skinner-Noble and Teeter, 2003). Such specialized equipment often requires individual bird housing (which may affect applicability of results). Long-term physiological response to stress can be obtained by heterophil-to-lymphocyte ratios (the ratio of the two most abundant types of white blood cells; Gross and Siegel, 1983; Katanbaf et al., 1989; Skinner-Noble and Teeter, 2009). The advantage of heterophil-to-lymphocyte measurement is that it reflects longer-term stressors, and not the stresses associated with handling to collect blood samples.

In conclusion, successfully addressing animal welfare requires a multi-faceted approach. No single measure answers the question “is the well-being of the animals in our care good”. Successful management to enhance well-being requires attention to detail, good record-keeping, and an eye to the contributions of the scientific community.

[Click here for references](#) □

Issues with Poultry House LED Lamps and Light Dimmers



LED lamps have changed the landscape for poultry growers in terms of energy savings related to poultry house lighting. No other lighting source (incandescent, compact fluorescent, cold cathode, high pressure sodium, etc.) comes close to the energy efficiency of LEDs. LEDs are roughly **80–85 percent more efficient** than incandescent lamps. However, during the transition from incandescent to LEDs, there have been some hiccups (Tabler et al., 2019).

Starting late last fall, we began getting an increase in calls from growers concerning strange dimming issues and premature LED lamp failures. Trips to various poultry supply vendors and LED distributors revealed boxes and boxes of failed LED lamps (still under warranty) of various brands that had been returned by growers. Through conversations with these vendors and distributors, we determined that the premature lamp failure problem had been steadily increasing in recent months.

This is not normal nor expected, and it led us to dig a little deeper into what was going on. While we haven't solved all the problems, we now better understand much of what is causing premature LED lamp failures and why some LEDs are losing brightness much more quickly than expected. Like many other complicated issues, it is not just one thing causing these problems. A part of the issue is the lamps, a part is the light dimmer, and a part is the compatibility between the lamps and the dimmer.

Incandescent and LED Lamps

Thomas Edison patented the incandescent light bulb (Figure 1; left) in 1879. It became **one of the most world-changing inventions ever conceived**. It produces light by forcing electrical current through a high-resistance tungsten filament. The result is about 80 percent heat and 20 percent light. Newer LED lamps (Figure 1; center, with globe removed, and right) produce light by switching current to a series of light-emitting diodes. LED lamps contain circuitry that includes drivers and light-emitting diode chips (Figure 2). Modern LED lamps are very efficient in comparison to Edison's incandescent lamps. However, incandescent lamps are much easier to dim. In contrast, LED lamps are much more sophisticated and require special considerations for dimming and proper performance.

In less than a decade, the entire world (poultry industry included) has made a dramatic shift from incandescent lamps to dimmable LED lamps. Despite some growing pains along the way, the energy savings and long-life potential of LED technology made the frustration worth it. However, within the poultry industry during the past 8 to 10 months, widespread problems with **rapid**



Figure 1. Incandescent (left) and LED lamps (center, with globe removed, and right).



Figure 2. LED lamp with globe removed to show LED chips.

lumen depreciation, erratic dimming performance, and premature total lamp failure have been reported on LED lamps that were only 2 to 3 years old; in many cases, several years before the warranty had expired.

Investigations have determined that **multiple brands of LED lamps are affected**, but the issues are particularly severe with inexpensive, omni-directional LEDs intended for household use and not designed for the more demanding and harsh chicken house environment. However, the issues are also present in high-quality, heavy-duty, directional LEDs specifically designed to withstand commercial poultry industry demands. In today's chicken house environment, the level of dimming and the wide variation in light levels required over the life of the flock demand that lamps and dimmers be compatible and designed to work well with each other.

While they are less expensive than high-grade agricultural LED lamps, **household LED lamps do not hold up well in a poultry house environment** and

growers are often disappointed with their performance. In addition, LED lamp technology continues to improve and become more cost- and energy-efficient each year. As a result, dimmers and dimmer technologies must also be updated and improved to remain compatible with rapidly improving LED technology. Increasing evidence continues to point to the fact that dimmers with older dimming technology are not compatible with modern LED lamp technology. In other words, **older style dimmers and modern LED lamps simply do not work well together**, and this is causing many of the dimming and premature lamp failure issues.

No one realized 5 years ago that dimmers and LED lamps weren't working well together, but we have since learned a great deal more about how dimmer operation may affect LED lamp life and performance. When the transition to LED lamps first began, we thought we had gotten a lucky break when our new LED lamps worked without changing the dimmer. However, as our pool of knowledge continues to increase in this area, **we need to question the wisdom of not changing the dimmer**. It's somewhat complicated and requires some understanding of how electricity works, but **here's why we may need to consider changing light dimmers** when using LED lamps.

How Dimmers Work

Alternating current (AC) has varying voltage polarity in an undulating sine wave that fluctuates from positive to negative voltage. In the U.S., this alternating cycle happens 60 times per second. This frequency is referred to as hertz. Common electrical supply in the U.S. is 60 hertz (the current "alternates" 120 times, or 60 cycles per second). Light dimming is possible because a dimmer chops off a percentage of the phase angle of the AC sine wave. The amount of the wave that is chopped off determines how bright or dim the lights are. If only a small amount of the wave is chopped off, the lights remain fairly bright. If a large amount of the wave is chopped off, the lights may be quite dim. There are two main dimming methods used to chop the sine wave, depending on whether the front edge or back edge of the sine wave is chopped:

1. **Leading-edge dimming** utilizes a current that is turned off as the AC sine wave begins, just after it crosses zero into positive territory. It cuts the front edge of each wave's half-cycle. Leading-edge dimming creates a rush of voltage every half-cycle, resulting in a rush of current to the light source. Also called forward-phase control dimming, **leading-edge dimmers can produce spikes in current that can cause increased stress to electronic drivers** (Liao, 2014). These current spikes are likely at the root of the issues we are seeing with LED lamps. Most LED chip manufacturers have indicated that exposure to current greater than 300 milliamperes will cause irreversible damage to the chips, which is typically observed in the field as erratic performance, excessive lumen depreciation, and premature lamp failure.

Leading-edge dimmer switches are simpler, less expensive, and much more common today than trailing-edge dimmers. They typically use

a TRIAC (triode for alternating current) switch to control power. TRIAC dimmers have been used since around 1960 and were originally designed to dim incandescent and halogen lamps and wire-wound magnetic transformers. Many leading-edge dimmer switches have a relatively high minimum load, which often rules out their use with modest-load LED circuits. This explains why it is sometimes necessary to put an incandescent lamp at the end of the line in a chicken house to help the dimmer find enough load to properly do its job.

2. **Trailing-edge dimming** (electronic dimming) utilizes a current that turns off as the AC sine wave ends, just before it crosses zero into negative territory. **Trailing-edge dimmers are more sophisticated** than leading-edge dimmers and provide smoother dimming control with less interference. They have been designed specifically for use with low-wattage LED lamps. Trailing-edge dimmers usually use a MOSFET (metal oxide semiconductor field effect transistor) or IGBT (insulated gate bipolar transistor) switch rather than a TRIAC switch and coil (ERP Power, 2016).

Trailing-edge dimmers have a much lower minimum load than leading-edge, **making them much more suitable for powering modest-wattage LED lamps**. Also called reverse-phase dimming, **these dimmers avoid current spikes** by switching the light phase circuit on just as the current changes direction and allowing the voltage to rise gradually before turning it off later in the half-cycle.

Unlike incandescent lamps, LED lamps have a built-in driver at the base. The driver converts AC power to direct current (DC) power and maintains a constant current supply to the LED lamp. This is in direct opposition to the phase-control dimming system used to dim the lights because the **driver in the LED lamp tries to compensate for the chopped-out portions of the input voltage** and maintain a constant current to the lamp. LED lamps rely on the driver circuits to provide constant DC current to the LED chips for proper performance. **LED chips are current-sensitive devices** and require good-quality, constant DC current (but not overcurrent spikes). **For an LED lamp to work properly with a phase-control dimmer, the electronics of its driver must be compatible with the dimmer.** Leading-edge dimmers work best with resistive loads (incandescent lamps). Trailing-edge dimmers work best with capacitive loads (LED drivers).

The incompatibility between LED drivers and TRIAC dimmers can cause multiple problems (Liao, 2014), including:

- **pop-on**, when the LED lamp suddenly turns completely on as the dimmer switch is gradually raised from the fully off position.
- **dead travel**, when changing the dimmer setting produces no visible change in light level.
- **drop-out**, when the lamp shuts off completely as it is being dimmed.
- **ghosting**, when light is still visible from the lamps even when the dimmer is fully off.

- **audible noise** from the lamp.
- **flicker or strobing** resulting from the current being applied by the driver to individual LEDs.

will work well with all lamps, and many older technology dimmers currently in poultry houses are not designed to handle sophisticated LED technology, which may result in lamp performance issues or premature lamp failure.

What to Do?

This is a tough question. As mentioned earlier, premature LED lamp failures are not the result of any one thing. It is critical to assess your unique situation and determine exactly where the problem lies. Again, **inexpensive big box store LEDs should not be used in chicken houses**. They are designed for households and not for the demanding workload that a poultry house environment requires. Also, if you switch to LED lamps from incandescent lamps or CFLs, you must have **good-quality, keyless sockets and proper wiring**. Inferior wiring and corroded sockets are not compatible with LED lamps. In addition, all lamps in a house should be of the same brand, wattage, and color (Kelvin rating). Different lamp manufacturers likely use different drivers that will act differently when dimmed, disrupting the light uniformity level throughout the house.

Perhaps the biggest concern is **LED lamp incompatibility with the current poultry house dimmer**. Like LED lamps, there are a variety of light dimmers used in poultry houses today. Unfortunately, information from numerous sources, including poultry industry executives, academia, lamp manufacturers, dimmer manufacturers, LED chip providers, and utility company power quality engineers, indicates that many common leading-edge poultry house light dimmers are producing large numbers of current spikes throughout the dimming curve. Independent dimmer testing on leading- and trailing-edge dimmers indicates that dimmer output current (blue line) and current to the actual LED chips (red line) for leading-edge dimmer #1 and leading-edge dimmer #2 produced current spikes in excess of 300 milliamperes throughout most, if not all, of the dimming range (green dotted line), while the trailing-edge dimmer produced current readings well below the 300 milliamperere damage threshold (Figure 3).

As a result of current spikes associated with leading-edge dimming technology, it is quite likely that leading-edge poultry house dimmers are causing irreversible damage to LED lamps, regardless of lamp brand or dimmer brand. Some LED lamp manufacturers are now manufacturing their own dimmers to work with their own lamps. Unfortunately, not all dimmers

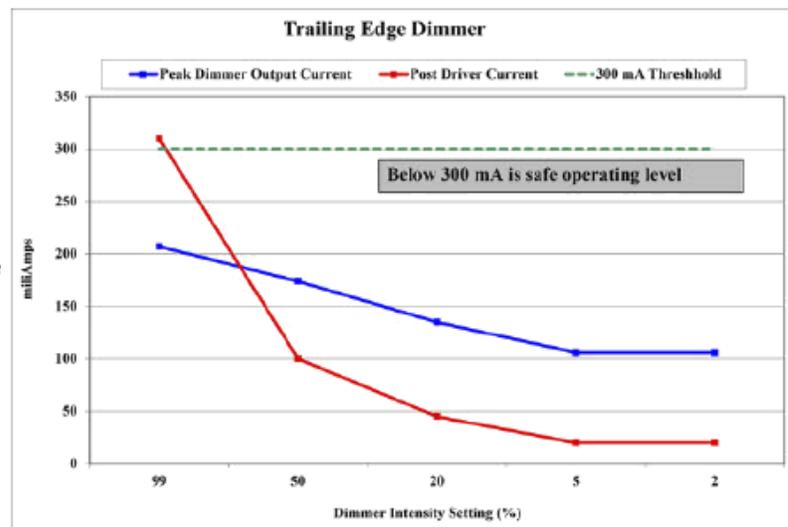
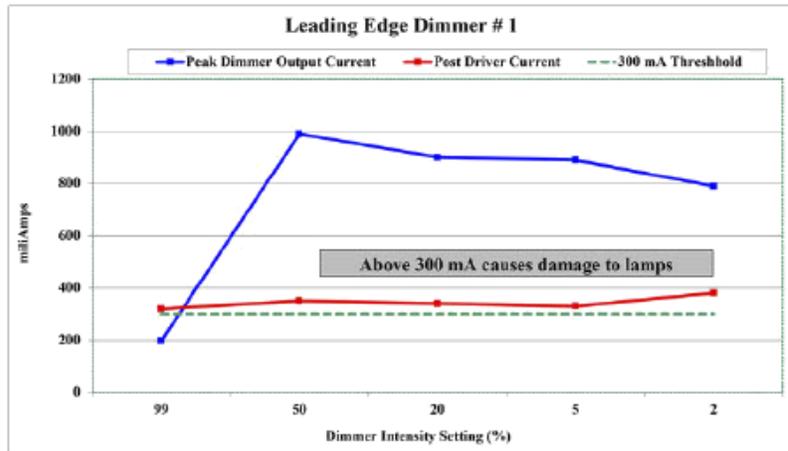


Figure 3. Current outputs of leading-edge and trailing-edge poultry house light dimmers.

Leading-edge dimmers were designed to dim incandescent lamps and are excellent at doing so. However, they are not compatible with today's advanced LED technology. Leading-edge dimmers are simpler and less expensive to manufacture, and while most traditional poultry house dimmers today are of the leading-edge variety, we are seeing increasing evidence that the **best dimming technology to couple with LED technology in chicken houses is trailing-edge dimmers.**

Summary

Poultry growers have seen remarkable energy savings from transitioning from incandescent to LED lamps. However, recently there have been an increasing number of issues with erratic dimming, excessive lumen depreciation, and premature lamp failures. Evidence points to an incompatibility between LED lamps and the light dimmer as the main cause of these issues. Reports from both the lab and the field tend to indicate that **leading-edge dimmer technology and modern LED lamp technology are simply not compatible.**

Leading-edge dimming technology tends to produce current spikes that are detrimental to LED chips in the lamps. **The damage to LED chips caused by these current spikes appears to be cumulative over time and is irreversible.** It will eventually lead to accelerated lumen depreciation, strange and erratic dimming problems, and premature lamp failures. Leading-edge dimmers are, by far, the most common light dimmers in poultry houses today. However, trailing-edge dimmers are much more compatible with today's LED technology.

We will continue to follow this situation. However, it may be that **poultry growers should consider switching to trailing-edge dimmer technology** to alleviate incompatibility issues between LED lamps and leading-edge dimmers. No grower wants to spend money needlessly, but neither do they want to deal with continuing dimming issues, excessive lumen depreciation, and premature bulb failures if a trailing-edge dimmer will stop the problem.

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By Tom Tabler, Extension Professor, Jonathan Moon, Poultry Operation Coordinator, and Jessica Wells, Assistant Clinical/Extension Professor, Poultry Science.



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6 Common Perimeter Air Inlet Problems in Poultry Houses

National Poultry Technology Center – Auburn University – September 2020

Jess Campbell, Jeremiah Davis, Kelly Griggs, and Carson Edge



From day-old chicks to catch, environmental management offers the number one opportunity to improve profitability in broiler production. Management during the first two weeks of a flock often dictates the outcome and the beginning stages of ventilation must be executed properly. Top growers pay close attention to minimum and transitional ventilation details and make sure all ventilation equipment is in top shape before each flock arrives. However, on many farms we often see opportunities for improvement in this area. We see growers that are working hard to grow chickens but seem to have forgotten about the importance of keeping perimeter air inlet doors (also called vents or baffles) and their operating components in good working order. Perimeter air inlet doors play a very important role in minimum and transitional ventilation and must not be neglected when it comes to maintenance. Now is the time to inspect all inlet doors for maintenance before cooler weather arrives.

1. Light shields/hoods: Many modern farms have metal light shields installed adjacent to the outside of each inlet opening to block sunlight, feed truck lights, and reflections from entering the building and disturbing birds. While this is a good practice for light control, these shields must not restrict airflow to the inlet behind it. Figure 1 below shows one example of the many on-farm fabricated designs that have been used on broiler and pullet houses. If the shields over these inlets have less open area than the inlet itself, they are limiting the house air exchange during full inlet door ventilation mode, and will likely force the house to transition into tunnel or tunnel assist prematurely. If this is the case on your farm, careful inspection of the current inlet doors and shields should be conducted.



Figure 1: An older example of corrugated metal and framing lumber light shield over perimeter sidewall air inlets in a broiler house. Here we are measuring the size of the opening to see if this shield air opening is properly sized for the inlet it is covering.

Figure 2: Clogged bird wire over sidewall air inlet

A good rule of thumb to prevent a restriction is to design for a combined free air opening of the shield for about 1.5 times larger than the inlet itself. For example, if the area of the inlet door is 3 square feet, the combined open area around the light shield should be about 4.5 square feet total. Any shield with a combined inlet area (example: 2 square feet) less than the air inlet open area (example 3 square feet) would indicate a restriction and might need to be repaired. There are engineered light shields on the market today that are designed to block light but not block airflow into the inlet. This might be an option for shields that are restrictive and causing problems.

2. Dirty bird wire over inlet opening: If houses seem to have lost minimum and transitional ventilation capacity you might want to check the bird wire on the outside of the inlets. It is possible for the inlet doors to be open but not delivering enough air into the house if the inlet screens on the outside are clogged with spider webs, dirt, and debris. The doors in this situation could be opened in excess and the house would still run at a higher pressure than normal if multiple inlets were in this same shape. Figure 2 shows the back-side of a large inlet opening that is more than 90% restricted because it has not been cleaned, rendering it useless from an air supply standpoint. This problem would have been harder to see if this inlet had a shield installed over it.

3. In-house air flow restrictions: If houses were built with water or electrical lines installed on the ceiling in the direct path of air flow (see figure 3), it is somewhat limiting the ability for air to mix properly during ventilation. Builders and equippers need to understand this and use alternate locations for these utilities. Obstructions that will potentially block air flow will make it harder to get incoming air from the inlet over the feed and water lines to adequately mix before it comes in contact with the birds and bedding. This can cause problems with inadequate moisture removal, wet litter, drafted birds, poor air quality, increased heating bills, and reduced bird performance.

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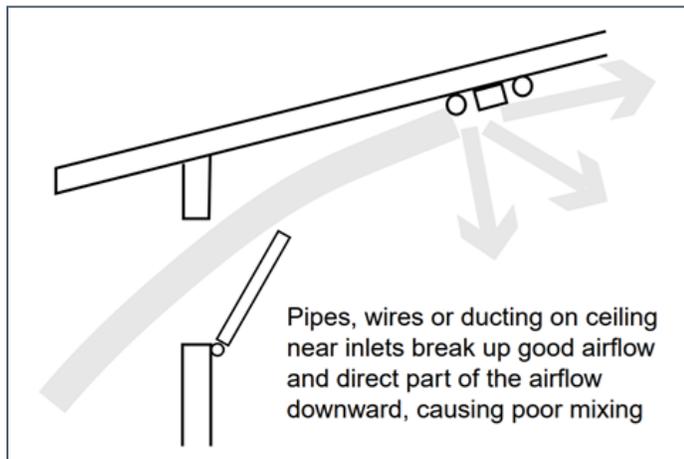


Figure 3: Illustration of air flow obstructions near a sidewall air inlet.



Figure 4: Two electrical conduits, running parallel to ceiling air inlets will trip the cooler incoming air stream before it gets a chance to mix with warmer air as it enters the house.

The picture in figure 4 shows two electrical conduits installed too close to the ceiling inlet door. These would cause minor obstructions to air flow. The picture in figure 5 is a collection of romex wires that are significantly blocking the path of airflow along the ceiling. We recommend to not install anything on the ceiling between the walls and lighting conduits (above outside feeder lines) to give the incoming air stream a smooth path to travel along the ceiling toward the peak of the house. Obstructions like the electrical conduits in figure 4 might not be cost effective to relocate due to the cost of the electrical work. However, for example, if the obstruction is a one-inch water line that runs the entire length of the house and within about one foot of the inlet, then this might be worth relocating. These mistakes should not be made when building future houses. We recommend smoke testing the air inlet during a ventilation cycle to see how the incoming air is being disturbed by the blockage to make a final decision to move the obstruction or not. If the obstruction is forcing air directly to the floor or will not allow incoming air to get over the outside feed and water lines it should probably be relocated.



Figure 5: Several romex wires create an obstruction to incoming air from this sidewall air inlet.



Figure 6: Rusted metal ceiling air inlet door (needs repaired or replaced)

4. Rusted doors and hinges: Every inlet door should open the same amount to allow for uniform air entry and temperature uniformity. Rusted or broken hinges must be repaired or replaced to keep all doors opening properly. The door in figure 6 is so corroded with rust it will not shut between ventilation cycles so the grower latched it closed. However, the inlet still has a cracked opening. Since it will not shut all the way, it has become a constant source of outside air leakage. It is important to repair or replace damaged inlets as soon as possible so they are not a source of air leaks, working against the house control, and drafting chicks during cold weather. Rusted hinges may also keep the doors from opening to the correct position and restricting air into the house. On some farms these problems are limiting a grower's ability to ventilate effectively and efficiently therefore it is in the best interest of the grower to eliminate as many inlet door malfunctions as possible.

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6 Common Perimeter Air Inlet Problems in Poultry Houses *(continued from previous page)*

5. Damaged insulation: Darkling beetles, birds, and rodents cause a lot of damage to insulation board on metal inlet doors. If the insulation is damaged (see figure 7), these doors do not seal tightly when closed and can be a major source of air leakage that works against the environmental control of the house. One damaged door may not seem to be a huge issue, but the fact is that we commonly find multiple damaged doors and many that are leaking when shut due to missing insulation. This should also be a reminder for growers to revisit and possibly upgrade the rodent control program, especially in close proximity to feed bins and evaporative cooling plenum rooms. Do not allow missing insulation on doors to chill birds and rob houses of fuel energy due to increased run times this winter.



Figure 7: Metal ceiling air inlet door (insulation damaged by rodents - needs repaired)

6. Cable, pulleys, and sprockets: It only takes one broken inlet machine cable (see figure 8) to make it a long day in the chicken business. Keep a close eye on cables for signs of wear or weak connections. A grower must do everything possible to keep all air inlet actuation components tuned up and ready to go. In order for all inlets to open evenly, sprockets, inlet cables, rods, and connection strings must be inspected for problems on a routine basis. Keeping doors adjusted will help you make sure the air is flowing uniformly in and throughout the house. The difference of only half an inch in inlet door opening can drastically change the incoming air pattern and how it effects the in-house environment. Steel cable can unwind as it ages and may require multiple adjustments to take the slack out of the cable to keep doors completely closed when not being used. Chain and sprocket connections as seen in figure 9 can be a good alternative to steel cable and pulleys but also require routine maintenance and lubrication to keep them from failing.



Figure 8: Broken inlet machine cable



Figure 9: Inlet door chain and sprockets

Bottom line: A four house poultry farm can have 200 (more or less) perimeter inlet doors installed. These doors and associated equipment require constant adjustment to keep the system in good working order. Every grower knows that this is no small task. It only takes one door to be out of adjustment for the grower to get a temperature alarm or one broken cable for a pressure alarm. Some of these problems can take several hours of hard work to resolve and in some cases result in significant out of pocket cost if the inlet machine is damaged or motor needs replacing. We find it is easier to manage equipment when we set priorities based on the upcoming season to help prevent major problems like this from occurring unexpectedly. This system must operate properly to give the grower the ability to ventilate correctly and grow a healthy and efficient flock. Please make time to inspect and repair perimeter air inlet equipment and components now so you can make a smooth transition into fall. Please visit www.poultryhouse.com for more information and good luck this fall from the NPTC. □

TPA GREATLY APPRECIATES OUR ALLIED MEMBERS



Ag Lighting Innovations
Tom Ellsworth
(615) 378-0108

DS Smith
Dwight Christian (205) 359-4190
Russ Williams (678) 283-4928



AGRO Merchants Group
Patrick DesJardins
(615) 310-3785

Diamond V
James McGinnis
(870) 822-9752



Alltech
Sam Bates
(229) 225-1212

Diversified Ag
Brad Bowen
(479) 879-2832



Animal Health International
Jeff Sims
(256) 504-2588

ECM
Luke Beegle
(814) 931-9911



Arm & Hammer Animal Nutrition
Jason Quick
(540) 271-4038

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BankPlus
Kenny Williamson
(601) 850-7306

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Jesse Rodriguez
(256) 506-2623



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(931) 225-1206



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Roy Brown
(901) 345-5333

Jamesway Incubator Co.
Krista Baker
(519) 624-4646 ext. 1244



ChemTrade Logistics
Kerry Preslar
(770) 530-9820

J.B. Hunt
Jeannell Goines (256) 603-2607
John Putnam (205) 234-3418



Chore-Time Poultry
Brent Escoe
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(931) 265-0138



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Johnny Smith
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CT Consulting
Chynette Todd
(931) 704-2336

Jones-Hamilton Co.
Steve Carpenter (334) 470-1561
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Cumberland Poultry
Brian Johnson (217) 820-3530
Gary Sadler (225) 531-2461

K Supply Co., Inc.
David Walker
(256) 894-0034



D & F Equipment
Greg Cagle
(256) 528-7842

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Mark Bellamy
(706) 983-1881



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Silvercote Insulation Jordan Helms (864) 315-7225	Zoetis Steven Britton (706) 949-6090



Not currently a member of TPA?

Contact Tracy at (270) 363-2078 or tracy@tnpoultry.org for more information about member benefits.



TN Poultry Association
P.O. Box 1525
Shelbyville, TN 37162
www.tnpoultry.org

Executive Director
Dale Barnett
(931) 225-1123
(931) 434-8045 mobile
dbarnett@tnpoultry.org

Member Services
Tracy Rafferty
(270) 363-2078
tracy@tnpoultry.org

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\$30,000 donated to TSU for tornado recovery efforts

June 22, 2020 on Fox17.com by Caitlyn Shelton

Twice Daily has donated \$30,000 to Tennessee State University (TSU) for tornado recovery efforts.

The donation will go toward the rebuilding of the Agriculture Complex that was destroyed in the March 3 tornado. The farm includes research areas for agriculture students.

At least four TSU buildings left in the path of the tornado were destroyed, causing an [estimated \\$35 million in damages](#).

The company is also planning to send volunteers to TSU to help plant trees on the research farm through its Thrive program. So far, the sustainability initiative has planted more than 25,000 trees across Middle Tennessee. □

Joe Gulizia has been selected as a national Phi Kappa Phi fellow representing MTSU! He is currently pursuing a M.S. in poultry science at Auburn. The **Yoerger Presidential Fellow** was established in 2001 as a result of the generosity of Past National President Roger Yoerger and awards \$8,500 each year to a student in one of the basic science disciplines (i.e., engineering, agriculture) rather than law or medicine. □



The latest economic impact figures for TN show the poultry industry to have a \$7.3 billion dollar overall economic impact, providing over 32,000 direct and indirect jobs with an average salary of just shy of \$47,000. <https://www.poultryfeedsamerica.org>. □



Zoey Kay Little
Egg'cited for her new shirt and new bike she got with her chicken money! Thank you for support of children!

Tennessee Agricultural Enhancement Program



Serving Tennessee Farmers



2020 Application C

Poultry Grower

**Application Period
October 1 – 7, 2020**

Application Guide

TAEP Investments	2	Program Requirements.....	5	Application C Form	9
TAEP Overview	3	Eligible Items.....	6	Additional TAEP Programs	11
Eligibility Requirements	4	How to Apply	8	TAEP Contact Information.....	12

TAEP Overview

The Tennessee Agricultural Enhancement Program (TAEP) was established in 2005 to provide cost share dollars to agricultural producers for the purpose of making long-term investments in Tennessee farms and communities. Participation allows producers to maximize farm profits, adapt to changing market situations, improve operation safety, increase farm efficiency, and make a positive economic impact in their communities.

More than \$185 million has been invested in 62,942 producer projects from 2005 through 2019. **Each TAEP dollar generates \$6.09 in local economies.**

Application Period

The 2020 application period is open for seven days: October 1-7, 2020.

Eligible Purchase Dates

Program purchases can be made starting October 1, 2020 and must be completed by the program reimbursement request deadline.

Approval Notification

Approval notifications are scheduled to be mailed in mid-December. Reimbursement packets will be mailed in January 2021.

Reimbursement Request Deadlines

The reimbursement request deadline for Poultry Grower is August 1, 2021. Payments are based upon expenses incurred for eligible program items.

2020 TAEP Application C		
Program	Reimbursement Maximum*	Reimbursement Request Deadline
Poultry Grower	\$6,000	August 1, 2021
<i>* Final maximums will be determined based upon overall demand for cost share funding.</i>		

Program Changes

Program Reimbursement Maximum

TAEP reimbursement maximums have been reduced for all programs due to anticipated demand and budget limitations. The program reimbursement maximum for Poultry Grower is \$6,000.

New Items

- Cool Cell Ventilation Systems and Watering Systems
- Slats for hen houses
- Nesting Pads for hen houses
- Egg Conveyor Equipment
- Brooders and Heaters

Eligibility Requirements

To be eligible for TAEP cost share, applicant must:

1. Be a citizen of the United States of America or lawfully present in the United States.
2. Be at least 18 years old during the application period.
3. Be a Tennessee resident operating a farm* located in Tennessee.

*A **farm operation** may be owned and operated by a single individual, multiple individuals, company, corporation or a partnership. A farm operation may involve the production of multiple agricultural products and have multiple locations. Only one person from the farm operation is eligible to apply for TAEP Application C cost share.

4. Have filed a Federal IRS Schedule F (Form 1040), Profit or Loss from Farming, within the last two years (2018 or 2019).

Applicant will not be required to submit a copy of their Schedule F at the time of application. However, applicant may be asked to submit a copy of their Schedule F prior to TAEP approval to verify their farming operation. If your operation does not file a Schedule F, please contact TAEP about alternate documentation to verify farming status.

5. Meet minimum poultry requirements for the program.
6. Have current membership with the Tennessee Poultry Association (TPA). Applicant membership will be verified with TPA to determine eligibility. Membership must be in the name of applicant or applicant's operation. Contact TPA at 931-225-1123 or visit www.tnpoultry.org for additional information.

Tennessee Department of Agriculture may:

- Accept, modify, or reject any or all requests.
- Modify program criteria, approval, and payment processes.
- Provide partial funding for specific activity components that may be less than the full amount requested.
 - Require additional information from the applicant.
 - Deny payments for projects that do not meet requirements.

Program Requirements

Application

1. Applications must be submitted during the application period October 1 – 7, 2020.
 - Applications must be mailed with a postmark ranging from October 1 – 7, 2020.
 - Applications will **not** be accepted if faxed or emailed.
 - Applications are ineligible if postmarked or received prior to October 1 or after October 7, 2020.
 - **Hand delivery is not allowed in 2020 due to concerns regarding the COVID-19 pandemic.**
2. Applicant may only submit one Application C per farm operation*, per Federal IRS Schedule F, per person, per application period.

*A **farm operation** may be owned and operated by a single individual, multiple individuals, company, corporation or a partnership. A farm operation may involve the production of multiple agricultural products and have multiple locations. Only one person from the farm operation is eligible to apply for TAEP Application C cost share.

3. Applicant will be notified in writing of approval or disapproval. Notifications will be mailed in mid-December.
4. Reimbursement packet supersedes all information printed in the application booklet.

Reimbursement

1. Receipts dated prior to October 1, 2020 are not eligible.
2. Receipts for in-kind services are not eligible. Trade-in value is not eligible.
3. Used equipment, used materials, and leased equipment are not eligible for cost share reimbursement unless otherwise noted.
4. Labor provided by applicant is not eligible for cost share reimbursement.
5. Applicant cannot be reimbursed for purchases from a business where applicant participates in ownership (producer cooperatives excluded).
6. Applicants cannot combine projects and submit more than one reimbursement for the same item.
7. Reimbursement documentation must be postmarked or uploaded to your TAEP Online Account by the reimbursement request deadline. Additional processing time is required for incomplete reimbursement requests and requests submitted within one month of the program deadline. It is recommended you submit your reimbursement request as soon as your project is complete.
8. There can only be one reimbursement payment per program approval. Projects must be completed by reimbursement request deadline.

Verification

1. Applicant must utilize equipment and structures reimbursed with cost share funds for the intended purpose of the program for a minimum of **five (5)** continuous years from date of purchase.
2. Site visits relating to the performance of the project before, during, and after completion may take place. Site visits may include verification of program eligibility to ensure applicants meet eligibility and minimum livestock/acreage requirements for chosen program(s).
3. Applicant may be required to repay funds for failure to comply with all aspects of the cost share guidelines.
4. Providing any false, fraudulent, or misleading information may result in penalties and/or make the applicant's operation ineligible to participate in present and/or future Tennessee Department of Agriculture programs for a minimum of five years and may result in civil litigation or criminal prosecution.

Poultry Grower Cost Share Opportunities

Minimum Poultry Requirements	Certifications	Lifetime Limit	\$6,000 Maximum Reimbursement
Broilers - 75,000/yr Non-Broilers - 10,000/yr	Not Applicable	Not Applicable	Standard 35% Cost Share
Final maximums may be reduced based upon overall demand for cost share funding.			

Guidelines

Eligible Items

Items not listed as eligible will not be considered for cost share reimbursement.

New or Used Equipment

Item 1

1. Propane Tank - above ground and for poultry use only; must be purchased and installed by a Tennessee licensed dealer and be ASME certified (American Society of Mechanical Engineers); 1,000 gallon minimum capacity (small capacity tanks of 500 gallons may be purchased to reach the minimum capacity); concrete pad or footers eligible; labor conducted by a contractor/supplier for installation is eligible; *not eligible - labor provided by the applicant*

New Equipment Only

Items 2 - 7

2. Generator — for poultry use only; minimum of 20 KW per house; concrete pad foundation; materials to connect and wire the generator; *not eligible — labor provided by the applicant*
3. Feed Bin with concrete foundation pad — for on farm storage of poultry feed only; must meet housing and feeding system specifications; labor conducted by a contractor/supplier for installation is eligible; *not eligible — labor provided by the applicant*
4. Litter Management Equipment — must be designated by the manufacturer for poultry house use; includes poultry specific mounted implements used to windrow, de-cake, scrape walls and clean houses for optimal litter management, composting and cleanup; *not eligible — self-propelled equipment, front end loaders or bucket attachments*
5. Overhead Trolley System — manual or automated; used to aid in the removal of mortalities and to transport supplies throughout the poultry house; must be purchased as a complete system; labor conducted by a contractor/supplier for installation is eligible; *not eligible — labor provided by the applicant*

Poultry Grower Cost Share Opportunities

Eligible Items

New Equipment Only

Items 2 - 7

6. Biosecurity Items — poultry house area use only
 - a. Drive Over Foam/Spray Vehicle Disinfection System
 - ramps are eligible if purchased with the system; *not eligible — purchase of foam*
 - b. Boot Wash — automatic
 - one per house for the main foot traffic or control room entrance
 - spare brush kit & scraper attachment are eligible with boot wash purchase; *not eligible — purchase of disinfectant*
 - c. Environmental Pads — reinforced concrete pads for the front/receiving end of the poultry house to allow for better cleaning and disinfection before and after receiving poultry
 - recommended dimensions: 20' wide x 24' deep (front to back) x 6" thick; reinforced concrete, sloped away from the building; labor conducted by a contractor/supplier for installation is eligible; *not eligible — labor provided by the applicant*
 - d. Farm Gate — entrance to the poultry operation; gates must be installed far enough off the road for a semi-truck and trailer to be safely and completely out of traffic before stopping at the gate
 - 12' to 16' gate, solar & battery setup; electronic opener/arm; must include two separate touch pads per gate, set at both high and low heights for easy access for all semi-trucks and farm vehicles; *not eligible - cellular remote controlled access, ornamental gate post construction (rock, brick, etc.), material and labor for providing electrical service*
 - e. Security Camera — perimeter use only; live feed with recorder; *not eligible - trail cameras*
 - f. Poultry House Cleaner — for cleaning, washing down, and disinfecting the interior of the poultry house
 - large 540 RPM PTO driven sprayer and/or blower rigs
 - sprayer tank size must be 500 gallon and PTO driven
 - blower must be PTO driven; spray attachment optional

7. Poultry House Retrofit Items

Items are for retrofit purposes only. Items are for use in growing areas only and must meet current poultry house specifications. New poultry house construction and repairs to existing equipment are not eligible.

- a. LED Lights and Dimmer Controllers - includes LED light fixtures that contain fixed LEDs within the apparatus or built into the fixture as one unit; includes automated dimmer replacements and upgrades to accommodate higher efficiency LED lighting; LED fixtures and bulbs must be designed specifically for poultry house use
- b. Ventilation - tunnel fans, stir fans, minimal vent fans and controllers; must be designated for poultry house ventilation use only and must be fixed mounted
- c. Ventilation Doors - replacement side vent, attic vent, tunnel doors, and inlets
- d. Replacement Motors and Bearing Assemblies - for poultry house fans, ventilation systems, automated feeding systems, and automated sidewall systems
- e. Cool Cell Ventilation Systems and Watering Systems - to include cool cell pads, cool cell pumps, regulators and medicator pumps/injectors specific for poultry house ventilation and watering systems only
- f. Slats for hen houses - must be plastic and preassembled slats only; *not eligible - labor and installation; replacement parts or individual materials*
- g. Nesting Pads for hen houses - replacement only - no repairs; *not eligible - labor and installation*
- h. Egg Conveyor Equipment - belts and egg tables only; replacement only - no repairs; *not eligible - labor and installation*
- i. Brooders and Heaters - full section replacement upgrade only; *not eligible - repairs or parts*

How To Apply

Paper Application

Paper applications must be mailed to TDA.

TAEP 2020 - C
P.O. Box 40627
Nashville, TN 37204

Paper applications must have a postmark ranging from October 1 – 7, 2020.

- Applications will **not** be accepted if faxed or emailed.
- **Hand delivery is not allowed in 2020 due to concerns regarding the COVID-19 pandemic.**

Tip: Applicants are encouraged to keep a copy of their application materials and mail the original using a traceable method of delivery. For example, USPS Certified Mail with Return Receipt method will provide the sender with evidence of delivery (to whom the mail was delivered and date of delivery).

1. APPLICANT INFORMATION

- Name — enter your full legal name and indicate your title and any suffix you may have
- Social Security Number — list only the last four digits of your social security number; additional taxpayer information will be collected at time of reimbursement; participants will receive Form 1099-G for payments over \$600
- Mailing Address — enter the address where you receive your mail; TAEP documentation will be sent to this address
- Farm County — enter the county where your TAEP project will be located
- Home Address — enter the address where you live; the home address may be the same as your mailing address; P.O. Boxes not accepted as a home address
- Home Phone & Cell Phone — enter available contact numbers
- Email — enter current email address (optional)

2. FARMING HISTORY

List the year you started farming your operation. *Example — 2005.*

3. TAEP PRODUCER NUMBER (TPN)

The TAEP Producer Number (TPN) is a unique number used to identify each applicant. The TPN is exclusive to an individual and cannot be transferred. If you have applied for TAEP within the past three years, your TPN will be mailed to you September 2020. Please include your TPN on the application form and any other TAEP correspondence. **New applicants will not have a TPN until their first application is processed.**

4. APPLICANT REQUIREMENTS

Applicant Requirements — Tennessee Poultry Association (TPA) membership required at time of application.

5. POULTRY INFORMATION

Poultry — Indicate your total number of poultry during a calendar year.

TAEP Contact Information

dairy.solutions@tn.gov
hay.storage@tn.gov
herd.health@tn.gov
livestock.equipment@tn.gov
livestock.genetics@tn.gov
livestock.solutions@tn.gov
poultry.grower@tn.gov
producer.diversification@tn.gov
rowcrop.solutions@tn.gov
working.facility@tn.gov
taep.online@tn.gov

Tennessee Agricultural Enhancement Program
Tennessee Department of Agriculture • Ellington Agricultural Center
P.O. Box 40627 • Nashville, TN 37204

Information Line

1.800.342.8206



Serving Tennessee Farmers



Physical Address:
Ellington Agricultural Center Holeman Building • 424 Hogan Road • Nashville, TN 37220



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