# TPA NEWSLETTER

*from the Tennessee Poultry Association*

Tennessee Poultry Association

**Spring 2019**

## WELCOME NEW ALLIED MEMBERS

Motion Industries
Keith Sandlin
256-366-0912

TriGreen Equipment, LLC
Dorman Grace
205-522-2606

W. W. Williams (generator sales)
Josh Ellis - 478-235-5657
Eric Seay - 865-407-5604

## TPA SCHOLARSHIP FUNDRAISERS

*SPORTING CLAYS*
Wednesday, April 10
Nashville Gun Club

*GOLF TOURNAMENT*
Thursday, April 11
Hermitage Golf Course

Details & registration form on page 51

## INSIDE THIS ISSUE



## VIRULENT NEWCASTLE (vND) UPDATE

Mar. 5, 2019. Since May 18, 2018, USDA/APHIS has confirmed **388 cases of vND in California, including 116 in San Bernardino County, 229 in Riverside County, 42 in Los Angeles County and 1 in Ventura County. USDA also confirmed 1 case in Utah County, Utah.** The quarantine area in Southern California has now been expanded.

The only way to stop the virus and eradicate the disease is to euthanize birds. This includes all infected birds as well as birds within heavily-infected areas. The highly contagious virus has resulted, or will soon result, in the euthanasia of more than 1 million birds in Los Angeles, Riverside, San Bernardino and Ventura counties. See more on vND on pages 2 and 13. □

## TN LEGISLATIVE UPDATE: Bill introduced to exempt Sales Tax on Agricultural Water

News flash

SB1460 Bailey / HB634 Halford was filed this session to exempt state sales tax on water used exclusively for Agriculture purposes and Governor Lee has included this exemption in his proposed budget. The Senate Bill is on the calendar in the Senate's Finance Ways & Means Committee set for March 12. TPA would like to recognize and thank the TN Farm Bureau Federation for initiating this legislation on all of agriculture's behalf this session.

TPA and UT Extension estimate the average state sales tax paid in TN to be about $1700 annually for an average 4-house broiler operation. If this bill passes, the proposed sales tax exemption would go into effect on July 1 and would apply only to designated meters used for Ag purposes (such as chicken houses), provided the grower has current Ag Exemption status in TN. Meters that share with residences or other non-Ag use would not qualify. Growers who do not have Ag Exemption status are encouraged to visit with their local Ag Extension agent for assistance. Please be sure to thank Sen. Bailey and Rep. Halford for sponsoring this bill, the Farm Bureau Federation for their support, and be sure to ask your local legislators for their support to get this passed. □

## NEW CLEAN WATER RULE

***WE'VE BEEN WAITING FOR THIS RULE FOR MORE THAN 3 YEARS!***

The official recent release of a new proposed Clean Water Rule is a major step toward fair and understandable water regulation on America's farms and ranches and other working lands. The previous rule would have treated much of the landscape as though it were water itself. That wasn't just confusing, but also illegal, which is why so many federal courts blocked its implementation.

We know ENVIRONMENTAL ACTIVIST GROUPS desperately want to impose and enforce the over-reaching 2015 Rule. This is why we need you to send your comments to EPA today.

Click here to Take a Stand for Clean Water and Clear Rules □

## 81 page complaint filed against one of the poultry companies by the Humane Society

This Dec. 12, 2018 article in Bloomberg News is a "must read" for everyone as it is a direct attack on our entire industry. ◘

## APHIS confirms 26 Newcastle disease cases in 1 week

BY ROY GRABER ON FEBRUARY 4, 2019 IN WATTAGNET.COM

*All but two of the recent cases were confirmed in Riverside County, CA*

Twenty-six new cases of virulent Newcastle disease (vND) were reported in the United States during the week beginning Jan. 25 and ending Jan. 31, the USDA/APHIS reported.

Of those 26 new cases, none were in commercial poultry flocks, and all cases were located in southern California. There was one case each in San Bernardino and Los Angeles counties, while the remaining 24 were in Riverside County. All cases but two were in "backyard exhibition chickens," according to APHIS. There was one case in a flock of backyard hobby turkeys and another in a retail feed store, both in Riverside County.

All birds affected by vND were euthanized, APHIS reported.

An additional 84 cases were confirmed between Dec. 21, 2018 and Jan. 24, 2019.

Since May 18, 2018, APHIS has reported 340 cases of vND in California, and one vND case in Utah. The Utah case, according to APHIS, was in a bird that was moved to Utah from Los Angeles County, California.

Of the confirmed cases to date, three of them have been in commercial poultry flocks, with all three of those flocks located in Riverside County.

The most recent vND case in commercial poultry was in a commercial layer flock that included at least 100,000 birds. That case was confirmed on Jan. 10. Prior to that, another commercial layer flock was affected. That case was confirmed on Jan. 8, and there were 159,000 laying hens in that flock. The first case of vND confirmed in a commercial flock during this outbreak was in a flock of 110,000 layer pullets, and that case was announced on Dec. 15, 2018.

The new vND cases come in spite of an order from California State Veterinarian Annette Jones, in which all birds in certain communities in Los Angeles, Riverside and San Bernardino counties be euthanized.

There has also been one case of vND in a backyard exhibition chicken in Ventura County, California.

**Note from TPA:** "Backyard exhibition chickens" are better known as "athletic chickens (or roosters)" in TN. Cockfighting is illegal in all 50 states. ◘



## Lessons learned from virulent Newcastle disease

BY DEVEN KING ON FEBRUARY 20, 2019 in WATTAGNET.COM

*With virulent Newcastle disease still at the forefront of concern for poultry farmers, an industry expert offers some insight to spread and biosecurity*

Poultry industry professionals expressed great concern over virulent Newcastle disease (vND) during the 2019 International Production & Processing Expo (IPPE). The outbreak of the disease will mean some flocks will need to be depopulated. In addition, the export of eggs to other states or internationally could be halted. *(continued on page 13)*

## BOOST PERFORMANCE WITH TRANSITIONAL VENTILATION

The warms days and cool nights of spring introduce special challenges for poultry house ventilation. Leveraging transitional ventilation can help maintain the temperature and relative humidity levels required for optimal brooding, while also supporting ideal litter and air quality.

### The Impact of Temperature

Optimum bird performance cannot be met at any age without adequate temperature. Young chicks are sensitive to cold, while older birds are most sensitive to heat. Low brooding temperature at placement decreases performance so significantly, it cannot be made up. At 35 days, body weight of birds placed at low versus adequate temperatures varied by 0.11 kg (Bruzual and Brake, 2000). To maximize performance, you must maintain the temperature ideal for birds at every stage–from placement through grow-out.

### Use Transitional Ventilation to Eliminate Chill Stress

During transitional seasons like spring and fall, you must account for the velocity of air flowing over birds. Cold outside air at high velocity can cause chill stress, which can decrease performance. Transitional ventilation focuses on removing heat without allowing cold air to flow directly on birds.

- Use half of tunnel or sidewall fans to bring air through sidewall vents to allow air exchange without cold stress
- Adjust static pressure controls on inlets to allow for more precise control

## ALLIED MEMBER NEWS

Fortis Solutions Group is pleased to announce the acquisition of **Premier Georgia Printing and Labels**. Premier, located in Flowery Branch, GA, is a full-service labels, packaging, folding carton, offset and flat sheet printing company. Primarily serving customers across the Southeast in the food end-market, Premier recently became SQF certified evidencing its commitment to food safety and quality assurance.

**GrassWorx** welcomes **Erin Wagner** to her new role as Sales and Marketing Specialist for their Poultry business. Erin is a recent graduate of Iowa State University with degrees in both Animal Science and Agricultural Business.

**BioSafe Systems** introduces its new Smart Spray Bar™ System. The Smart Spray Bar System measures the amount of SaniDate being applied in parts per million, as well the volume of water flowing through the spray bar system. Collected data helps maintain compliance with all requirements of the Food Safety Modernization Act and providing necessary documentation when associated with kill-step interventions.

**Lettie McKay** has joined the field staff with the **TN Farm Bureau Federation** and will cover middle TN counties. A native of Pulaski in Giles Co., Lettie is a graduate of the UTIA. She will serve as the state coordinator for both Poultry and Natural Resources to represent their membership.

**Cumberland** has launched 3 new poultry production technologies. Cumberland's enhanced **EDGE controller** with new scenario mode makes temporary changes to environmental controls in poultry production facilities easy and efficient. Scenario mode allows a group of functions, such as fans, inlets and lights, to be temporarily reset by operators using a "virtual" switch without having to reprogram the controller. Cumberland is also introducing two ventilation products for poultry houses: **Rack and Pinion Tunnel Door** and **Continuous Air Inlet.**

For a list of upcoming PAACO (Professional Animal Auditor Certification Organization) auditor trainings go to https://animalauditor.org/ to see the various Meat Welfare Auditor and Poultry Welfare Auditor certification programs offered.

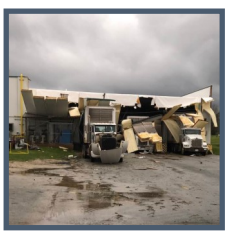
## NEWS FROM AROUND THE COMPLEXES

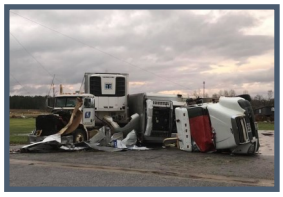
**Aviagen®** has announced that **Michelle Rowlett** has assumed the role of Elkmont GP Operations Manager. Rowlett oversees the GP Pullet and GP Breeder teams for the Elkmont Complex. She has worked with Aviagen for 14.5 years.

Originally from Collinwood, TN, she has a BS in Animal Science from UT Martin and since joining Aviagen has served as GP Pullet Poultry Specialist, GP Breeder Poultry Specialist and Senior Poultry Specialist.

**Aviagen®** Veterinarian **Dr. Sara Reichelt** was recognized as a "Future Leader" by the American Association of Avian during the 2019 American Veterinary Medical Association's Veterinary Leadership Conference. Held Jan. 10-13 in Chicago, the conference theme was "Evolution of Leadership." Dr. Reichelt was selected based on her proven leadership abilities and long list of academic and professional accomplishments.

A tornado hit the **Tyson Foods** hatchery in **Eufaula, Alabama** on March 3 and the hatchery is no longer in operation. The processing plant in Eufaula was not obstructed and operated as usual on March 4.



### DATES TO REMEMBER

**FEED MILL MANAGEMENT SEMINAR**
**March 19-20, 2019**
**Nashville, TN**
http://www.uspoultry.org/educationprograms/index.cfm#fmms

**REAP GRANT APPLICATIONS DUE**
**April 1, 2019**
**Details on page 44**

**TPA SCHOLARSHIP FUNDRAISERS**
***TPA Sporting Clays Shoot***
**April 10, 2019**
**Nashville Gun Club**

***TPA Golf Tournament***
**April 11, 2019**
**Hermitage Golf Course**
**Nashville, TN**

**UGA HOT WEATHER MANAGEMENT WORKSHOP**
**April 15-17, 2019**
**Watkinsville, GA**
www.poultryventilation.com

**NATIONAL BREEDERS ROUNDTABLE**
**May 16-17, 2019**
**St. Louis, MO**
http://www.uspoultry.org/educationprograms/index.cfm#nbr

**POULTRY PROCESSOR WORKSHOP**
**May 22-23, 2019**
**Nashville, TN**
http://www.uspoultry.org/educationprograms/index.cfm#nbr

**SHOOTING HUNGER**
**June 7, 2019**
**Carroll County Shooting Sports Park**
**Huntingdon, TN**
Register here

## Tyson Foods Announces Executive Changes Following Keystone Acquisition

January 14, 2019 18:37 ET | Source: Tyson Foods, Inc.

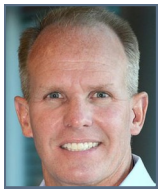
SPRINGDALE, Ark., Jan. 14, 2019 (GLOBE NEWSWIRE) -- As part of the integration of recently acquired Keystone Foods and the company's global growth efforts, Tyson Foods, Inc. (NYSE: TSN) today announced changes to the enterprise leadership team that reports directly to President and CEO Noel White, effective January 28, 2019. They include:

*Chad Martin*

**Chad Martin**, who has served as senior vice president and general manager, Beef Enterprise for Tyson Fresh Meats, is being promoted to group president, Poultry. Martin joined IBP, inc., which later became Tyson Fresh Meats, in 1996. He has since held a number of management positions in the U.S. and Canada, previously serving as the vice president of strategy and margin enhancement of the company's beef business.

*Donnie King*

**Donnie King**, who previously worked as Tyson Foods' president of North American operations, is returning to lead the company's international business as group president, International. He'll be responsible for the overall international growth strategy, global business models, and overseas operations. King joined Tyson Foods in 1982 and held roles of increasing responsibility until he left the company in 2017. During his tenure, King served as president of Prepared Foods, and senior group vice president of Poultry and Prepared Foods.



*Doug Ramsey*

**Doug Ramsey**, who has served as group president, Poultry since 2017, will assume the newly created role of president, Global McDonald's Business, leading the relationship with a key Tyson Foods customer. Ramsey joined Tyson Foods in 1992 and has served as president of Poultry Operations, and was senior vice president of Big Bird and Fowl, Value Added.

"This refinement of our team will help us to take advantage of our biggest growth opportunities, which are value-added foods and international markets," White said. "I look forward to working with this team to deliver results for our customers, consumers, investors and team members."

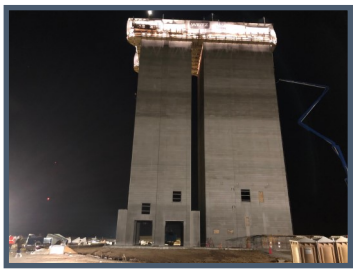
The company also announced that Frank Ravndal, former president and CEO of Keystone Foods, will be leaving to pursue other opportunities. He will remain through March to assist with the integration process.

Through the **Keystone acquisition**, Tyson Foods now has eight plants and three innovation centers in China, South Korea, Malaysia, Thailand and Australia that, in addition to the three plants the company already operated in China, will help meet growing international demand for protein.

"We're very optimistic about the opportunities in the global market. It's estimated 90 percent of the global growth in protein demand will be outside of the U.S. and 60 percent of the total demand will be in Asia," White said. "Donnie's previous experience growing both our domestic and international businesses position him to lead all aspects of our international efforts and deliver continuous top and bottom line growth." □

## Feed Mill Construction at Tyson Humboldt

The continuous concrete pouring phase for the new feed mill for Tyson in Humboldt has been completed. According to complex manager Tom McCue, it is Tyson's largest feed mill to date. The pictures below show the progression of the project through February 28.




# KEEP CONTROL

Maintain complete control during load-out, cleaning and restocking with Cumberland's scenario feature for EDGE®. The bypass option allows for system changes with the press of a button.


The EDGE® Controller quickly identifies issues and responds with self-diagnostics, triple layer protection and instant notifications. Revolutionize your operation with the next generation of controls.

*Ready for your custom solution?*
*Find your dealer and learn more at cumberlandpoultry.com*

**PROVEN & DEPENDABLE™**

AGCO
Your Agriculture Company

Cumberland is a part of GSI, a worldwide brand of AGCO



CUMBERLANDPOULTRY.COM

## MTSU to begin offering a minor in Poultry Science this Fall

Poultry Science

Beginning this Fall, the School of Agriculture at Middle Tennessee State University will offer an undergraduate minor in Poultry Science. "The new minor will be the academic cornerstone as we expand our focus in poultry science at MTSU," says Dr. Kevin Downs, poultry scientist and coordinator of the new program. The Poultry Science minor will consist of coursework in poultry production, poultry evaluation, poultry nutrition and feeding, poultry reproduction and breeder management, poultry processing, and business management. The School of Agriculture will offer a total of five poultry science courses, more than any other university in the state of Tennessee. Downs adds, "We want to be the destination school in our state for high school and community college students interested in studying poultry science and pursuing a career in the poultry industry. The School of Agriculture at MTSU is dedicated to connecting the best and the brightest with the tremendous opportunities for careers in the poultry sector." In addition to the new Poultry Science minor, the School of Agriculture is also collaborating with Tyson Foods-Shelbyville on the Middle Tennessee Junior Broiler Program (see page 41). The School has also begun efforts to engage college and high school students through the MTSU Poultry Science Club, an MTSU collegiate poultry judging team, and a first ever MTSU Poultry Academy this Summer for high school juniors and seniors. For additional information about MTSU's poultry program, contact Dr. Kevin Downs at kevin.downs@mtsu.edu or (615) 898-5217. □

## $ TPA SAVING YOU MONEY!!!!

**ARE YOU POSSIBLY DUE A REFUND FROM A UTILITY COMPANY FOR ANY DEPOSITS?**

Tennessee Poultry Association

TPA Board Member Darryl Brown, a grower for Aviagen in Giles Co., brought this to our attention and we want to share it with everyone. While many growers are set up with a line of credit there are those who had to put down cash deposits of significance with their utility company when new meters were established. TPA has identified that there are growers who are eligible to request refunds that did not know (or had forgotten) that they need to do this. Some utilities may require holding these deposits for 3-5 years and the amounts can be as much as several thousand dollars, so it's sure worth looking into. These utilities are not voluntarily refunding these deposits and *they are not required to do so by law*. Be sure to inquire and to *request the refund for each meter*. If the time period has not lapsed to be entitled to a refund, be sure to put this on your calendar for the utility company is not likely going to do this for you!

**DO YOU HAVE EACH ELECTRIC METER SET UP FOR AG EXEMPTION FOR STATE SALES TAX?**

Growers are encouraged to make sure they have each eligible meter set up for Ag exemption for state sales tax. TPA has helped identify farms in the past who were not set up for this exemption and has also found farms that *only had* one meter set up and not their others. Most utility companies require filling out *one exemption form for each meter*, not just one form per farm. State sales tax paid in the past on electricity is refundable if you have been paying on a farm or a set of houses that should have been Ag exempt. TPA has helped a couple of farms get refunded for as much as 6 and 8 grand each. Your local county Ag Extension agent can assist with this process and is the best resource for discussing exemptions and obtaining refunds.

**COST-SHARE OPPORTUNITY FOR RETROFITS THRU NRCS.**

The state NRCS office has shared that they may be able to fund some energy retrofit projects later this spring. Only those who applied and met the Jan. 2019 EQIP application deadline will be eligible for consideration, and there were not many applications. *Only those who have a Conservation Plan (CP) in place are ever eligible to apply* for EQIP funds. All growers are therefore encouraged to have a CP on file at their local NRCS office. Your local county District Conservationist (DC) is available to provide this service free of charge. It is simple and easy to do. All growers are encouraged to have a CP on file before it is needed. Everyone who needs to do some energy retrofits is encouraged to go ahead and apply for future EQIP funding – the funds can always be turned down later if not needed. (See page 44 for USDA/REAP grant opportunities for other energy-related projects.)

**CAFO PERMITS ARE NO LONGER REQUIRED FOR DRY LITTER POULTRY OPERATIONS OF ANY SIZE IN TN**.

Effective July 1, 2018, CAFO permits are no longer required by TDEC for any dry litter poultry operation of any size in Tennessee. *Basic records are still recommended and required* to be fully compliant with the Clean Water Act and everyone of course is encouraged to always meet their integrator's litter management requirements. UT Extension has developed a "TN Poultry Litter Land Application Management" worksheet that everyone is encouraged to follow in addition to keeping basic records. https://extension.tennessee.edu/publications/Documents/W796.pdf . Save your money on costly NMPs and cNMPs when they are not needed or required! If in question, feel free to contact the TPA office and let Dale assist you. □

## Jeremiah Davis Named Director of Auburn's National Poultry Technology Center

Auburn University biosystems engineer Jeremiah Davis has assumed duties as director of the Auburn-based National Poultry Technology Center, or NPTC. Davis had served as associate director of the research and outreach center since joining the Auburn faculty in 2015 and succeeds Jim Donald, who retired Dec. 31 as Department of Biosystems Engineering professor emeritus and NPTC director emeritus.

*Click here for full article* □

## UT Martin dedicates new poultry building

UT Martin recently dedicated their poultry building in a cooperative arrangement with Tyson OBC. A special thanks to Cumberland Poultry / GSI for donating the equipment, QC Supply for the installations, Ag Lighting Innovations for the lights and dimmer, SunCoast Bedding for the pine shavings and TPA for the floor mats. Shane Joyner with Tyson OBC is to be credited for conceiving and driving this project, and Brian Johnson with Cumberland for the equipment and installations. UTM will grow one flock of 1,200 birds each semester to help train and educate students and to conduct applied research studies. □

Tennessee Poultry Association

AG LIGHTING INNOVATIONS

Cumberland

QC SUPPLY

SUNCOAST PINE SHAVINGS

## UT Martin partners with Tyson Foods Inc.

MARCH 4, 2019 from UT Martin ACADEMIC AFFAIRS

Tyson

THE UNIVERSITY OF TENNESSEE MARTIN

The University of Tennessee at Martin has partnered with Tyson Foods Inc. to add chickens to the list of animals UT Martin students work with during agricultural production courses. Tyson will provide the birds, which will be housed in a renovated barn facility on the UT Martin Teaching Farm. The facility officially opened March 1 with a ribbon-cutting ceremony including Tyson representatives as well as UT Martin faculty and students from the College of Agriculture and Applied Sciences. Pictured in the top left photo below in front of the new facility are (l-r) Shane Joyner, Tyson Foods Inc.; Dr. Todd Winters, dean, UT Martin College of Agriculture and Applied Sciences; Dr. Wes Totten, chair, Department of Agriculture, Geosciences, and Natural Resources; and Keith Riley, Tyson Foods Inc. Dr. Craig Darroch, professor of animal science, helped to coordinate and implement the new production program and will supervise the facility on behalf of the university. □


## Clay Co. 4-Hers Compete in Outdoor Meat Cookery

Submitted by: Haley Barnes, UT Extension-Clay County Agent

Each year 4-Hers from across the state compete in a contest called Outdoor Meat Cookery. The purpose of this contest is to promote the use of meat products in the diet by teaching the art and science of safely preparing beef, lamb, pork, and poultry in an outdoor setting with the use of a charcoal grill. The youth are scored on appearance, grilling safety and skill, cleanliness, imagination of recipe, palatability, and overall attractiveness of final product. Clay County has a competitive history in this event, but this past year they particularly excelled in poultry.

The contest begins within each region. Clay County competes in the Central Region at the Wilson County Fair Grounds, but before that, hard work and practice are essential. The youth practice multiple times prior to the contest, honing their grilling skills and perfecting their recipes. As a part of the preparation, Clay County has a tradition of bringing their 4-H family together for a meal in which the 4-Hers prepare the meats and poultry while their family members bring side dishes and desserts. Learning activities, such as this contest and other 4-H activities are an important part of youth development, but fellowship is equally important.

Teams of four compete with each member cooking their selected species, but they compete on an individual basis as well. This year Clay County's Senior High 4-H team placed second, advancing on to the state contest. For the species of poultry alone, Clay County had a total of five youth within the Senior and Junior High divisions grilling. Three of those received top ten high individual awards. This contest is fairly competitive within the Central Region as it draws approximately 170 participants.

As Clay County advanced on to the state contest their success did not end. The team, which included Health Kimes, Ella McLerran, Mason Smith, and Matt White, placed second in the state. Matt White, cooking poultry, placed first top high individual in the state providing him with the eligibility to compete on an additional level at the National 4-H Chicken Barbecue Contest held during the National Poultry and Egg Conference in Louisville, Kentucky.

Now you're probably thinking that you would like to get your kids involved in this activity so they can grill for you, but let's make this come full circle. Yes, they are learning how to grill, but think one step further. They are developing valuable lifeskills, such as teamwork, communication, responsibility, problem solving, and leadership. That is what 4-H is about, right? Let's remember the 4-H motto, "To make the best better." Through 4-H youth are provided with opportunities to development skills for life while making it fun and interactive. ◻

## Judges side with Trump administration on packer rules

**Dec. 27, 2018 by Tom Johnston in MeatingPlace.com**

USDA was not "arbitrary and capricious" in withdrawing an interim final rule that would have made it easier for farmers and ranchers to sue meatpackers on claims of unfair treatment in business contracts, the Eighth Circuit Court of Appeals has ruled.

The appellate judges denied a petition to review brought by the Organization for Competitive Markets, which contends that USDA has violated a congressional mandate given in the 2008 farm bill to publish a regulation outlining criteria around contracting practices by June 2010.

OCM, on behalf of two poultry growers and a cattle rancher, filed the lawsuit late last year after USDA, under the new Trump administration, withdrew an interim final rule — known as the Farmer Fair Practices Rules — implemented at the end of the Obama administration in 2016. That interim final rule would have made it easier for farmers and ranchers to prevail in cases where they claim packers treat them unfairly in contracts because it would have essentially eliminated the need for proof of competitive harm.

Implementation of the Farmer Fair Practices Rules would have represented a change in USDA's regulatory approach and would have conflicted with the courts' historic interpretations of the Packers and Stockyards Act (PSA).

In its ruling, the panel of appellate judges wrote, "USDA explained that it was withdrawing the interim final rule and taking no further action on the proposed regulations because the proposed regulatory change of course would generate protracted litigation, adopt vague and ambiguous terms, and might prevent innovation and foster vertical integration that would hinder new market entrants. … These are legitimate regulatory and substantive concerns."

USDA attorneys told the court last fall that the agency planned to put the issue of the PSA rules on its spring 2019 regulatory agenda, with a possible notice of proposed rulemaking coming sometime after that, and then another rulemaking process to follow that notice. ◻

## Challenges to anti-animal confinement laws rejected

JANUARY 8, 2019 BY ROY GRABER FROM WATTAGNET.COM

*California and Massachusetts measures that call for strict farm animal housing standards allowed to stand*

The United States Supreme Court on January 7 declined to hear cases challenging anti-animal confinement laws in California and Massachusetts.

In both cases, states filing the suits to overturn the California and Massachusetts laws challenged the constitutionality of the laws, stating that one state cannot mandate how agricultural production is done in other states.

### Challenge to California laws

One of the cases rejected was a challenge to animal confinement laws in California that, among other things, call for specific criteria for housing conditions for egg-laying hens. California's Proposition 2 requires that all eggs produced in California come from hens that have adequate room to stand up, sit down, turn around and extend their limbs without touching another bird or the sides of the cage. AB 1437 requires that eggs from all other states that are sold in California be raised according to Proposition 2 standards.

The court's rejection of the case would also clear the way for the recently passed Proposition 12, which calls for even stricter standards, requiring that all eggs produced in or sold in California to come from cage-free laying systems by the end of 2021.

The legal challenge to the California laws was filed by the Missouri Attorney General's Office, and the states of Alabama, Arkansas, Indiana, Iowa, Louisiana, Nebraska, Nevada, and North Dakota joined in the suit.

### Challenge to Massachusetts law

In 2016, Massachusetts voters passed a similar statewide ballot initiative, known as Question 3, which when it becomes law in 2022, would make it illegal for farmers to keep sows in gestation crates, layer hens in cages, or calves in veal crates. The law will also make it illegal for products raised in other states and not in accordance with those standards to be sold in Massachusetts.

Indiana filed the legal challenge to the Massachusetts standards, and Alabama, Arkansas, Louisiana, Missouri, Nebraska, North Dakota, Oklahoma, South Carolina, Texas, Utah, West Virginia and Wisconsin joined Indiana in the suit. □



***Not currently a member of TPA?***

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

## Lawsuit challenges USDA's medium CAFO exemptions

Dec 05, 2018 in FeedStuffs.com by Jacqui Fatka

*Citizen and animal welfare groups seek additional environmental reviews for medium-sized concentrated animal feeding operations.*

A coalition of eight groups filed suit against the U.S. Department of Agriculture for its current procedures that exempt medium-sized concentrated animal feeding operations (CAFOs) from additional environmental reviews by the government and requiring notice of their planned operations to neighbors in the affected areas.

The groups bringing the suit are the Animal Legal Defense Fund, Association of Irritated Residents (California), Citizens Action Coalition (Indiana), Dakota Rural Action (South Dakota), Food & Water Watch, Iowa Citizens for Community Improvement, the Institute for Agriculture & Trade Policy and White River Waterkeeper (Arkansas.).

USDA's rule change, adopted in 2016 by the Farm Service Agency, grants exemptions from the usual process of notice, comment and oversight in cases where the government is providing taxpayer-subsidized loans to CAFOs considered "medium-sized" by USDA. Such facilities are authorized to hold nearly 125,000 chickens, 55,000 turkeys, 2,500 pigs, 1,000 beef cattle or 700 dairy cows. Prior to 2016, FSA performed environmental analyses under the National Environmental Policy Act (NEPA) to assess the impact of government loans or loan guarantees to CAFOs that confined at least 350 dairy cows, 500 cattle, 1250 pigs, 27,500 turkeys and 50,000 chickens.

In the suit, the groups argued that NEPA analyses — which took place before loans or loan guarantees were approved — served two important purposes.

"First, they provided a governmental check on the negative externalities of industrial animal feeding operations, which have long been established as having serious effects on communities and the environment," according to the suit. "Second, the analyses provided neighbors, nearby farmers and advocacy groups — like the plaintiffs here — with notice of the planned development of new facilities or expansion of existing ones as well as information about their risks, enabling the public to provide input and raise concerns before the federal government disbursed funds."

The plaintiffs requested that the court declare illegal and issue an injunction requiring USDA to withdraw the Medium CAFO Categorical Exemption rule.

The lawsuit alleges that both the rule-making process and the final rule now being implemented by the Trump Administration violate NEPA and the Administrative Procedure Act by failing to provide adequate notice of the proposed rule change and refusing to clarify why medium-sized CAFOs should be provided this special treatment and automatically exempt. Between the rule's implementation in August 2016 and December 2017, the government allowed 40 such operations in four Arkansas counties alone with no public comment or environmental assessment. During the same time frame, eight such operations in Iowa, housing nearly 20,000 pigs and generating as much untreated sewage as a town of 200,000 residents, were also allowed to escape any assessment or comment period, the groups said.

"Responsible agricultural operations that are committed to being both good neighbors and good stewards of the communities in which they operate have nothing to fear from notice to the community and an assessment of their operations," the coalition said in the lawsuit. "This irresponsible change in the rules that have helped protect rural and small communities for decades is, instead, designed to protect polluters and undermine transparency. Small family farms and their neighbors are disadvantaged, while huge corporations are given a government green light to operate with impunity. That's not only morally wrong; it's clearly illegal, too. Though we represent a broad and diverse coalition of citizens and advocates from across the country, we are all alarmed at the impact of this change and share a common goal of ensuring USDA looks out for family farms and rural communities, and not just the interests of giant corporations." □

## Update on setbacks for new houses in Oklahoma

Oklahoma has had a temporary **moratorium** in place since Nov. 2018 on accepting or processing new or expanding poultry operation permits until after the current legislative session ends this May 31.

A bill was proposed this session to restrict new or expanding poultry operations with more than 30,000 birds from locating within a half mile (2,640 feet) of occupied residences, schools, cemeteries, parks or city limits; 500 feet from public highways or property lines; a quarter mile (1,320 feet) from a stream; and 1,000 feet from water wells. This bill has been declared dead by its sponsor after failing to receive a hearing in committee.

New rules approved Feb. 5th established that poultry operations with 150,000 or fewer birds would be restricted from locating within 500 feet of an occupied residence, while those with more than 150,000 birds would be restricted from locating within 1,000 feet of an occupied dwelling. New and expanding poultry operations would also be restricted from locating within 1,000 feet of a school or city limits; 150 feet from public highways or property lines; 200 feet from a stream; 100 feet from private wells; and 500 feet from public wells. □

## Outgoing Michigan governor vetoes cage-free egg bill

Dec. 31, 2018 from WattAgNet.com by Roy Graber

Rick Snyder says there is insufficient scientific evidence that cage-free eggs are superior to conventional eggs in terms of animal welfare or food safety

In one of his last acts as governor of Michigan, Rick Snyder vetoed a bill that would establish the effective date of requirements that all eggs produced in Michigan come from cage-free laying systems.

The 2009 law that created and phased in new standards for cage-free housing for certain animals would have been effective October 12, 2019. However, Senate Bill 660, sponsored by Senate Majority Leader Arlan Meekhof, R-West Olive, would change that deadline, requiring cage-free chicken housing to begin Oct. 12, 2025.

The bill, also known as the Animal Industry Act, also would require all eggs sold in Michigan come from cage-free hens in 2025. Additionally, it would extend the deadline for the removal of gestation stalls for sows from October 12, 2019 to April 1, 2020.

Snyder, who leaves office at the conclusion of 2018, vetoed the bill, which is intended to protect the state's egg producers from being undercut by competition in the future, reported the Detroit News. But the outgoing governor, a Republican, said he didn't believe that eggs produced in cage-free laying systems had any health or welfare advantages over eggs laid by caged hens.

"The body of research into hen health and egg safety does not provide a clear indication that any one type of hen housing impacts egg safety more than another," Snyder wrote in the veto letter.

The National Association of Egg Farmers had opposed the Michigan legislation and reached out to every legislator in the state in 2018 to explain that trying to legislate cage-free eggs won't achieve animal welfare and food safety goals. "Apparently Gov. Synder saw these explanations in the news," the association's president, Ken Klippen, said in an email. □

## With 'Ag Gag' Law on Appeal, Iowa Considers New Bill to Ban Deceptive Trespass on Agricultural Facilities

March 5, 2019 from the DesMoinesRegister.com

With Iowa's controversial "ag gag" law on appeal in the courts, lawmakers are considering a narrower bill that would create a special trespassing crime for agricultural facilities. Supporters say the law is necessary to protect farmers from people who intend to hurt their industry while opponents say it harms free speech.

*Click here for full article* □

## Lessons learned from virulent Newcastle disease *(continued from page 2)*

During the week of February 8-14, the United States Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) confirmed 10 additional cases of virulent Newcastle disease in California's Riverside and San Bernardino counties. In total, there have been more than 375 cases since May 2018.

### Spread of disease

"It is difficult to know how the disease spreads in all cases, but it is commonly felt that fomites -- physical carriers of contaminants -- carry the disease agent from one farm to another," said Eric Gingerich, D.V.M., technical service specialist with Diamond V.

These fomites can be people, equipment, egg handling materials, feed sacks, vehicles, wild animals, or free-flying birds.

"Infected chickens, if added to a flock as is done quite commonly in backyard situations, will spread the disease very readily. The all-in all -out concept prevents the introduction of disease from infected birds," he said.

### Lessons learned

"The industry has learned (from vND) that our biosecurity systems in place on some farms are not capable of preventing the spread of such a disease," said Gingerich.

It has been suggested that exposure to back yard flocks, unknown by the producer, is at the root of the spread of this disease. "There is no treatment for this disease as it is due to a virus. An increase in mortality above normal and the finding of typical lesions should trigger a producer to get a confirmation of the disease by a diagnostic laboratory," Gingerich said.

### Increased biosecuirty

Some producers within the egg industry close to the areas of high risk have ramped up biosecurity measures. These measures include increased sanitation of egg handling materials and greater employee decontamination practices before working in chickens, he explained. "Some have also booster vaccinated their flocks with Newcastle disease vaccine." ◻

## New Protocol Share for Creating Poultry Disease Vaccines

Researchers at The Pirbright Institute have published their procedures on video for creating a vaccine that protects against Marek's disease and infectious bursal disease (IBD) using a CRISPR/Cas 9 gene editing system.

*Click here for full article* ◻

## Early exposure to *Clostridium* protects birds from necrotic enteritis

Feb. 22, 2019 in PoultryHealthToday.com

Early exposure to *Clostridium perfringens* (CP) in used litter may be a way to minimize the impact of necrotic enteritis (NE) in broilers, said Steve Davis, DVM, Colorado Quality Research.

NE, caused by the CP pathogen, remains a problem in "no antibiotics ever" production systems.

However, in studies he's conducted in birds raised without antibiotics, it's difficult to initiate NE in birds exposed to CP very early in life, he told *Poultry Health Today*.

Click here for full article ◻

## Reflecting upon the recent *Salmonella Infantis* outbreak– whose responsibility is it?

There is a very interesting op-ed posted on Feb. 24th in FoodSafetyNews.com by Coral Beach, regarding the recent *Salmonella Infantis* outbreak that the CDC has now declared to be officially over after affecting people in 32 states. The outbreak strain of *Salmonella Infantis* was identified in samples from raw chicken products from 76 slaughter and/or processing establishments, from raw chicken pet food, and from live chickens, according to the CDC's outbreak statement.

Excerpts from this op-ed piece include: "I do believe people need to get a clue and stop cutting up raw chicken on the same board they use for their carrot and celery sticks. However, I do not believe consumers have any blame when it comes to the pervasive pathogen problem plaguing poultry producers. I believe it is the responsibility of government to serve and protect us, and that includes doing more than chatting with food companies and industries when there are documented problems".

Beach goes on to state: "In the meantime, riddle me this: Why doesn't the government declare *Salmonella* an adulterant like it did with *E. coli* after the deadly 1993 Jack in The Box outbreak?"

FSIS and the NCC were asked to comment and all indications are that this discussion will only elevate.

To see the full article, go to Beach Beat: CDC says outbreak's over; USDA says it's 'engaging' industry; what will chicken producers say? ◻

# How UK broiler farms cut antibiotic use

Mar. 6, 2019 from PoultryWorld.net by Jake Davies

**Broiler farmers in the UK reduced their antibiotic use by 82% between 2012 and 2017, and the sector now produces half the meat eaten in the UK using less than 9.7% of the total antibiotics licensed for food-producing animals. Here, Poultry World looks at how it was done.**

**[Heating without introducing moisture has transformed their industry.]**

Replacing where possible, reducing overall use and refining best practice have been the cornerstones of the antibiotic reduction program that has delivered dramatic results for the British poultry industry. It has cut total use by almost three quarters, removed many of the most critically important drugs from poultry production and, perhaps most impressively, changed the perceptions of an industry often stereotyped as the worst for irresponsible medicine use. All without government intervention or a change in the law.

But it might have been a different story. In 2011 British legislators were looking at tough new laws that the neighboring government of the Netherlands had introduced, severely limiting the amount of antibiotics that could be used in agriculture.

## Responsible use

The poultry industry in the UK proactively decided to take matters into its own hands, setting up an Antibiotic Stewardship group in 2011 tasked with pre-empting the need for new laws. "Once you put legislation in place, you can create a lot of barriers and problems," according to Slate Hall veterinarian Daniel Parker, who is an adviser to the group. "Our approach was to work with the government and demonstrate that these products were being used responsibly."

A key part of the stewardship program – which was coordinated by the British Poultry Council (BPC) – was that the participants worked together pre-competitively. Until now, that has continued to be the case, says Mr. Parker, and is the secret to the success of reduction in the UK. "The various share data between each other, there's a lot of cooperative work going on within the BPC membership which in my view has driven the changes that we've seen."

The latest report released by the BPC reveals just how successful the initiative has been. Between 2012 and 2017 usage was down 82% – and the industry managed a 40% reduction between 2016-2017 alone. Considering fluoroquinolones in isolation, then their use was down 91%. Achieving this reduction has been about ensuring good chick quality, a good environment for birds that is disease free and good quality feed, according to Mr. Parker. "Unfortunately, in reality it's not always that easy to achieve those outcomes," he explains. **One major help, however, has been biomass boilers – and specifically indirect heating – which warm sheds without introducing moisture.**

## Indirect heat

**"Historically you had a heater in the house producing Co2 and water, once that water is in there your biggest job is trying to get that water out of the house. In my view, taking out that early moisture has transformed poultry production in this country – there is better litter quality, coccidiosis control and ultimately better gut health."**

In addition, says Mr. Parker, there has been investment in new housing, with better insulation and temperature control. But despite the successes, there are still health challenges on farms, and medicines need to remain available to treat them, he says. "There's an awful lot of chickens out there that don't get treated, those farms that do need medicating get targeted." On his own practice, record keeping is a key part of the reduction strategy, with codified records of which treatments are recommended based on the diagnoses.

## Health issues

The main issues found on farms in this post-antimicrobial environment are relating to chick quality, leg health and a further 10% is some form of enteric disorder. With chick quality, it is mainly early infections, and the dramatic reduction in routine antibiotic use has seen overall mortality increase to about 1.7%, as opposed to about 1% when prophylactic treatments were more common.

Mr. Parker says improving chick quality is a task for the entire supply chain, and gains are to be made in ensuring the highest quality control from the breeder farm right through to hatch. "Finally, when your chicks hatch they must be graded and remove those that should not be delivered to farm." The leg issues tend to arise at around the first two weeks, and once an infection is established, it is difficult to treat. "The problem is that they are quite low grade, but they start to present in the mid-to-late teens, and often they are non -responsive, or poorly responsive to antibiotic therapy at that stage. "The blood supply isn't sufficient to actually get a kill on these bacteria. So we see ongoing culling."

## Further work

The BPC stewardship group is continuing to work on its best practice, but Mr. Parker feels it may have reached close to the limits of reduction, explaining that he expects use to perhaps increase slightly before levelling off. But work is ongoing. Data collection will continue to be improved, and detection is also a focus. "We want to look at better more rapid testing methods for antimicrobial sensitivity but also the overall gut in terms of diagnostics. If we have a viral infection for example, we don't want to treat that with antibiotics – having improved diagnostics therefore would be helpful." Daniel Parker was speaking at the Society of Feed Technologists' poultry conference. □

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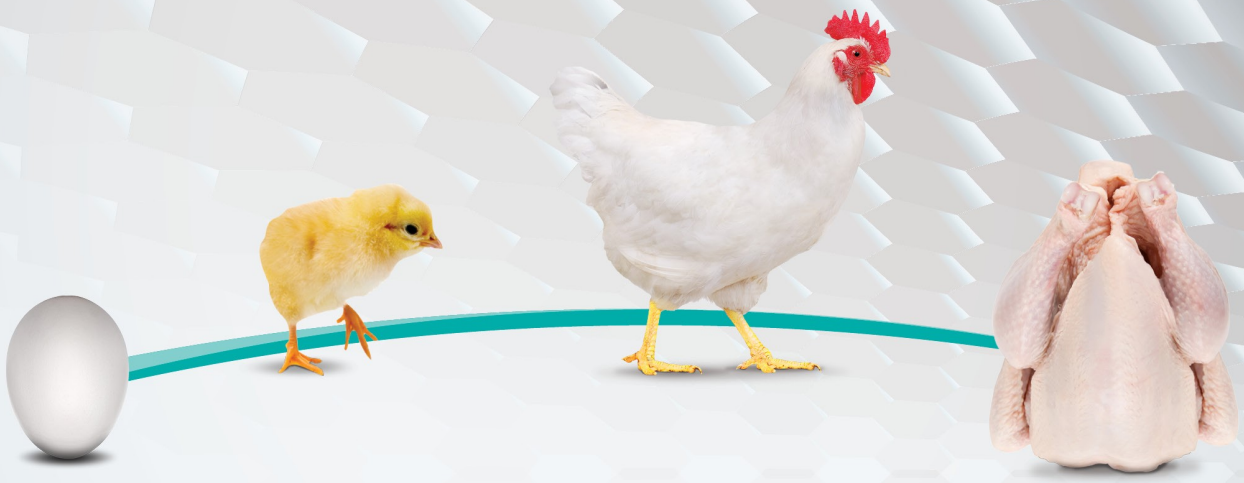

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REFERENCES
1 Data on file.
2 Data on file.



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PREVENTION WORKS
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## Management key to preventing green muscle disease in broilers

*By Tom Tabler, Ph.D., Extension Professor, Mississippi State University Extension Service, Poultry Science Dept.*

Poultry production in the US is at record levels and expected to continue rising thanks to consumer demand [1], especially for white meat. The trend has led to a steady increase in the market weight of broilers — but this sometimes comes with unwanted consequences, such as deep pectoral myopathy, commonly called green muscle disease (GMD).

This condition isn't new and it can occur at any age or weight. GMD is not to be confused with woody breast, which has been featured in a number of articles in recent years and is distinctly different.

GMD is closely associated with heavier weight birds grown for the debone market. As the percentage of birds grown to heavier weights for deboning has increased, so has the incidence of GMD showing up at processing plants.

This degenerative muscle disease affects the minor pectoral muscles — the tenders — of poultry. Unfortunately, it's not detected until birds are deboned at processing and it results in condemnations.

If a bird with GMD isn't deboned and is sold instead as a whole carcass or as parts, the problem doesn't show up until the chicken is on someone's dinner table. There's no infectious agent involved and no public health concern, but who wants to eat green chicken?

**It's costly**

GMD is costly. Several years ago, it was projected that for a plant processing 1 million head of 7- to 8-pound broilers per week, losses from GMD would be about a ton of condemned tenders per week and a similar weight of fillet trimmings each week, resulting in an economic loss of $7,000 per week.[2]

Actual numbers are likely higher today because many birds may be processed at 9 or more pounds live weight, and many plants are now processing at least 1.25 million head per week.

**Wing flapping = GMD**

It's believed GMD results from contraction of the breast fillet and tender that control up-and-down wing movement. Expansion of the tender is difficult because of its location. The tender is located between the breast bone and the large breast fillet, and it's encased in a fibrous sheath that allows little room for increased muscle volume.

As the bird flaps its wings, the tender's muscle volume tries to increase but can't. Blood supply is cut off, and the result is oxygen deficiency that causes localized death of cells and tissues.

GMD can occur after one serious episode of wing flapping, or it can occur cumulatively due to multiple episodes. It's probably more common in heavier weight birds because heavy fillets press on the tender, making it more difficult for the tender to increase muscle volume.

An important cause of GMD, therefore, is anything that causes increased bird activity that leads to wing flapping. Growers disturbing birds by moving too fast through the house, bright or intense lighting, excessive noise or rough handling of birds during catching as well as running loud equipment in or near the poultry house are all factors that can lead to increased bird activity and, ultimately, GMD.

**Colorful stages**

Tenders in chickens with GMD don't turn green immediately. I've seen every stage of the condition, from the early beginnings when the predominant color is red, to the final stages when one or both tenders may be all or partially green.

For the first 48 hours or so immediately after the initial event, the tender appears red, which is due to ruptured blood vessels. After 48 hours and for the next few days, the affected tender takes on a light pink color that progresses gradually to dark purple or plum.

As more time passes, maybe a week or longer, the tender finally turns to green, the color for which it is named. The green color is the result of the gradual breakdown of hemoglobin and myoglobin in the damaged muscle tissue. I consider it similar to walking into the drop-down bumper hitch on the back of my pickup. The soon-to-be bruise is red for the first day or so, then eventually blue, purple, yellow and finally green a few days later. While the causes may be different, the results are pretty similar — ruptured blood vessels and damaged tissue.

**Adjust management**

While a host of genetic, physiological and farm-management factors likely play a role in the occurrence of GMD, the key to controlling the problem appears to be management that limits wing flapping.

Birds should be disturbed as little as possible. Note that I did not say to neglect your flock! You still must regularly check birds and monitor air quality, ventilation, temperature, ammonia levels and litter conditions, and mortalities need to be removed. However, when working in or around the houses, move slowly and use extra care, especially near migration fences. Birds tend to pile up at migration fences, more so if they are pushed too fast, and piling results in increased wing flapping.

Noise levels inside and outside of poultry houses need to be kept to a minimum since loud noise frightens birds and increases wing flapping. This may mean putting off mowing around houses a few extra days, but that's better than panicking birds.

Other ways to minimize bird activity is by maintaining low light levels and making sure you don't run out of feed, since hungry birds become very active when they have access to feed again.

*(continued on next page)*

## Management key to preventing green muscle disease in broilers *(continued from previous page)*

Be extra careful preparing the house for catching. Feeder and drinker lines must be winched into the ceiling for catching, which means increased noise levels from the drill and winches. Proceed slowly and as quietly as realistically possible since extra activity and movement of lines above the chickens' heads will make them nervous and flighty and more prone to wing flapping. They are afraid of movement above their heads because it's similar to being attacked by aerial predators.

In short, GMD appears to be closely tied to farm management, unlike diseases that result from some type of infectious agent. Management that lessens or minimizes wing flapping throughout the flock appears to be the best defense we currently have against GMD.

**'Heads up' to processing**

Anytime those of us on the live-production side of the poultry business know birds to be marketed may have a problem, it's a good idea to give the processing plant a "heads up" instead of assuming it's the plant's problem.

This would include GMD, which can be suspected if live production knows something happened before processing to cause an undue amount of wing flapping. The processing plant may want to adjust the speed of the cone line for deboning or add an extra worker or two.

Conversely, it should be the same on the processing side. If the plant sees a high incidence of GMD, the live-side folks need to know about it so they can initiate a search to find the cause and prevent it in the future. Maybe a grower was bush-hogging next to the poultry house a few days before processing or maybe the lighting program was changed, leading to increased bird activity and wing flapping.

Communication on both sides, and a better understanding and appreciation of what the other side is dealing with, will make things run smoother for everyone and help the industry manage problems like GMD at processing.

*Editor's note: The opinions and recommendations presented in this article belong to the author and are not necessarily shared by the editors of Poultry Health Today or Zoetis.*

1. US poultry production set to rise 3%. Poultry World. February 9, 2018. http://www.poultryworld.net/Meat/Articles/2018/2/US-poultry-production-set-to-rise-3-246723E/. Accessed March 14, 2018.
2. Finding answers to 'green muscle disease." WATTAGNet.com. April 20, 2011. https://www.wattagnet.com/articles/8761-finding-answers-to-green-muscle-disease. Accessed March 18, 2018.

## Scientists find promising results in study about E. coli treatment

January 4, 2019 information from FoodSafetyNews.com

Scientists from the University of Glasgow in Scotland are reporting they have found a way to treat E. coli O157 infections without causing serious side effects.

The study, published in **Infection and Immunity**, looks at how the aurodox was able to block E. coli O157 infections.

The medication could be used as an anti-virulence therapy for the treatment of these infections.

Aurodox is a specialized metabolite of streptomyces goldiniensis discovered in 1973.

The compound reduced the ability of E. coli O157 to bind to human cells and, unlike the use of traditional antibiotics in E. coli O157 patients, did not cause the release of toxins. The team showed it did not induce expression of a protein called RecA, which is essential for production of Shiga toxin.

Scotland has one of the highest incidences of E. coli O157 and almost half of such cases in the country are in children less than 16 years old.

Professor Andrew Roe, professor of molecular microbiology and lead author of the paper, said aurodox prevented the E. coli bacteria from binding to human cells and acted as a disease-blocking compound.

"E. coli O157 is a potentially fatal bacteria bug that currently is not recommended for treatment with antibiotics. Our results are encouraging and suggest that this compound could be used as a promising anti-virulence therapy for the treatment of these infections," he said in the paper.

The work was funded by the Biotechnology and Biological Sciences Research Council (BBSRC) and done collaboratively with the University of Strathclyde. □

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## It takes two: Coccidiosis vaccines effective against E. tenella after adequate cycling

**Posted on December 26, 2018 in *PoultryHealthToday.com***

Coccidiosis vaccination was effective in broilers challenged with *Eimeria tenella* but only after vaccinal oocysts cycled twice, Laura Tensa, DVM, told *Poultry Health Today*.

Tensa and colleagues at the University of Georgia conducted a study after a poultry integrator reported problems with coccidiosis due to *Eimeria tenella* despite the use of multiple coccidiosis vaccines and in-feed anticoccidial treatments.

The study was conducted at the University's Poultry Diagnostic and Research Center so it could be well controlled.

The investigators tested two vaccines given at day 1 of age, each used alone or followed by an ionophore beginning at day 14 of age. The combination of vaccination with an in-feed anticoccidial — a so-called bioshuttle program — is intended to mitigate the weight loss and decreased feed conversion that may occur after coccidiosis vaccination.

To evaluate the impact of vaccine cycling, the investigators evaluated the effect of treatments when broilers were challenged early at either 11 days of age — before the ionophore treatment began on day 14 — or at 21 days of age. They used a pathogenic field isolate of *E. tenella* for the challenge because it causes bloody droppings, which make it easy to identify. Results in treated birds were compared to those for unvaccinated, challenged birds.

**Impact of cycling**

After the early challenge at 11 days, vaccination alone did not protect birds against *E. tenella* because the vaccinal oocysts hadn't cycled enough to enable the development of immunity. After the 21-day challenge, however, vaccination with or without an ionophore at day 14 did protect against the pathogen, as evidenced by reduced gross lesion scores, Tensa explained.

Live coccidiosis vaccines simulate natural immunity against coccidia by providing a controlled dose of *Eimeria* oocysts. When chicks in the study were vaccinated for coccidiosis on day 1, vaccinal oocysts cycled on days 7 and 14.

"That's a good two cycles" and by then, some protective immunity has developed, she said. Tensa added that the ionophore allowed them to "decrease the hit" flocks experience from the vaccine while birds continue to develop immunity.

She concluded that when used properly, either vaccination alone or when followed with an in-feed anticoccidial is effective against *E. tenella*. When using a bioshuttle program, it's important not to begin feeding the anticoccidial before vaccinal oocysts have completed cycling. Tensa also recommended using anticoccidial sensitivity testing to make sure the *Eimeria* affecting flocks is sensitive to the feed medication used.

To listen to the podcast go to https://poultryhealthtoday.com/it-takes-two-coccidiosis-vaccines-effective-against-e-tenella-after-adequate-cycling/?utm_source=Poultry+Health+Today+Newsletter&utm_campaign=a64538fb1a-AAAP_antimicrobial_stewardship_PHT_1_8_2018_COPY_0&utm_medium=email&utm_term=0_5ac605299a-a64538fb1a-252086165 □

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## Woody breast effect on meat quality significant: study

**By Julie Larson Bricher on 1/14/2019 in Meetingplace.com**

In a new study, researchers suggest that the occurrence of woody breast abnormality in chicken breast meat exerts a more profound and noticeable effect on meat quality traits than the presence of white striping or spaghetti meat abnormalities.

Researchers compared the effects of the three muscle abnormalities on a range of quality traits in breast meat, including meat color, pH, proximate composition, fatty acid profile and collagen, thermal properties, and texture and water mobility.

The study found that all three breast abnormalities were associated with a higher pH and a significant increase in moisture and fat level along with a decrease in protein and ash content.

Woody breast was shown to have the most detrimental effect on quality and the chicken breast sample exhibiting this abnormality showed significantly higher collagen content and denaturation of proteins by heat.

Read the abstract online at the peer-reviewed journal *Food Research International*.

## How picking increases Campylobacter in processing

Feb. 1, 2019 in WattPoultry

There's an interesting article in WattPoultryUSA-digital that discusses how automated feather picking machines used in poultry processing can increase the number of *Campylobacter* bacteria on carcasses by 100 times.

## Infectious Bronchitis Control: Understanding Why It's So Difficult

The best strategy for IBV control is the use of live, attenuated vaccines in broilers coupled with a combination of live followed by killed vaccines in breeders and layers. However — as many producers also know — complete protection is difficult to establish because different IBV types don't cross protect.

*Click here for full article*

## Genetic Study Seeks to Prevent Foodborne Infection Caused by Salmonella

A project presented at FAPESP Week London identifies genes that allow bacteria to survive in the digestive tract of poultry and thus infect humans.

*Click here for full article* ◻

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## Testing Feed Samples for the Presence of Salmonella

A research project, run by AFIA and for which USPOULTRY and other organizations are partners, is aimed at assessing the potential for salmonella to be present in feed.

*Click here for full article* ◻

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## Storm in a teacup: The ionophore coccidiostats debate

Ionophore coccidiostats tend to cause a stir. Some expect that they will soon cease to be feed additives, while others believe they will at least remain available through the vet. Still others expect that it will be completely over for ionophores soon. **read more** in Poultry-World.net ◻

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## Sequencing the poultry red mite genome – why is this important?

Jan. 11, 2019 excerpts and information from an article by Tony McDougal in PoultryWorld.net

The red mite, *D. gallinae* is an ectoparasite of poultry that primarily feeds on the blood of poultry that can readily transmit Newcastle Disease, avian influenza A virus, *Escherichia coli*, *Pasteurella multocida*, *Salmonella gallinarum* and *S. enteritidis, and other pathogens*.

PoultryWorld.net shares the latest research regarding a genome sequencing project that is helping to "understand the nitty-gritty of what happens in the mite, what drives the physiological processes and what processes we could interfere with to control it." As reported by Tony McDougal, one of the researchers stressed that at the present there is no one thing to control the parasite: "Vaccination will be one of the control methods in the future, but no single thing will be a silver bullet." "Other strategies will include biosecurity, appropriate treatments at the right time, nutrition and breeding." ◻

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## Novel antimicrobial packaging film offers strong light barrier: study

By Julie Larson Bricher on 2/19/2019 in MeatingPlace.com

Scientists have developed a packaging film using natural ingredients that provides enhanced light-barrier and antimicrobial properties and has the potential to prolong food quality, especially for light-sensitive foods such as fresh meat.

The novel composite films are comprised of low-density polyethylene (LDPE) containing natural photosensitizing riboflavin. The film exhibited excellent light absorption in the ultraviolet and short-visible regions (200–500?nm). The films also showed strong antimicrobial activity against both Gram-negative (>99 percent reduction) and Gram-positive (94 percent reduction) bacteria.

Researchers reported that when applied to extra virgin olive oil packaging film, the novel composite film effectively preserved the product's essential pigments, chlorophyll and β-carotene, by preventing the light-induced photodegradation.

Read the abstract in the peer-reviewed journal *Food Control*. ◻

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## Novel treatment method efficiently decontaminates chicken: study

By Julie Larson Bricher on 2/6/2019 in MeatingPlace.com

A new research study has found that a combination of pulsed electric fields (PEF) treatment and oregano essential oils (EOs) can be used to effectively decontaminate chicken against a range of Campylobacter jejuni strains.

Researchers reported that a sequential combination of PEF treatment followed by re-suspension in oregano applied to liquid produced significant increases in inactivation levels in liquid at all field strengths tested ($p<0.05$).

When the approach was applied to raw chicken, a PEF field strength of 1 kV/cm followed by re-suspension in one-quarter MIC of oregano achieved a nearly 1.5 log reduction of Campylobacter jejuni. This specific PEF/oregano EO combination also showed synergistic behavior.

Researchers indicated that the method holds promise for use in raw chicken decontamination since the levels of inactivation achieved was in the same range as those obtained using conventional thermal treatments.

To read the abstract, visit the peer-reviewed journal *Food Control* online. ◻

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1 Data on file.



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PREVENTION WORKS
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## How a Single Avian Influenza Protein Can Increase Period of Infection

New research led by scientists at The Pirbright Institute has shown how an avian influenza virus protein, called PB1-F2, is able to shut down two pathways of the chicken immune response to increase the length of time the virus can be transmitted.

*Click here for full article* □

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## Biosecurity expert sees more room for improvement on poultry farms

**Dec. 18, 2018 in PoultryHealthToday.com**


Biosecurity on commercial poultry farms has come a long way but still has far to go, Joseph Giambrone, PhD, professor of poultry science, Auburn University, told *Poultry Health Today*.

Maintaining flock welfare and reducing economic losses are two obvious incentives for ramping up biosecurity, but the federal government provides even more, he noted.

**Farms with low-pathogenic avian influenza that have to depopulate flocks won't be compensated by the government if they haven't implemented good biosecurity measures.**

Overall, Giambrone thinks most US poultry farms are doing a good job with biosecurity. What he likes:

- Most poultry houses are now fenced and gated with signs posted about biosecurity procedures.
- Everyone coming onto the farm needs to sign in.
- Cars are usually parked outside the farm and, in some cases, visitors have to honk the horn, which prompts the farmer or caretaker to come out and review biosecurity measures.
- Farms routinely use foot baths. (Because traditional liquid foot baths can get contaminated with organic material, they are being replaced with a powder that contains bleach.)
- Disposable shoe covers and gowns have become standard equipment.
- Visitors are asked to scrub hands with a disinfectant before entering the buildings.

Other positive trends include improved water disinfection, making sure feed doesn't contain viruses or bacteria, better ventilation and litter management, and more composting.

**Remaining pitfalls**

Still, there is ample room for improvement, but not all are quick fixes.

For example, Giambrone said some farms are too close together, which can lead to windborne disease transmission. There's not a lot that can be done about it, he conceded, but ideally farms should be at least 2 or 3 miles apart.

Another major challenge is the continued enforcement of existing biosecurity rules. On many large farms, he noted, the growers have outside jobs and hire flock caretakers. There's not always supervision to make sure rules are followed, "So, that's a breakdown right there," he said.

Furthermore, not all growers understand that visiting family or friends who have chickens on other farms may be vectors for disease. Likewise, it's important to make sure flock caretakers don't have backyard chickens.

One other concern: There are a lot of new growers in the poultry industry, Giambrone said. They may be professionals who suddenly decide they want to get into poultry production, but they don't necessarily understand microbiology.

**'Bottom-line it'**

He stressed that a producer's service staff should sit down with growers to emphasize the importance of biosecurity and recommended routine checks that include farm inspections and checking the grower's logs.

With new growers, producers should have the service staff inspect farms for cleanliness and sanitation well before birds arrive. They should be there to receive birds. During that first week, it's critical to meet several times with the new grower.

"The best thing a service person can do is have good communication skills because he's got to be able to talk with these individuals and get them engaged," he said.

"Bottom-line it" with growers, Giambrone advised. Explain the financial payback for getting good results regarding weight gain, feed conversation, livability and low condemnations. Growers need to be told if they are underperforming, and that if they don't do well, they could eventually be a farm without any chickens.

To see the podcast go to https://poultryhealthtoday.com/biosecurity-expert-sees-more-room-for-improvement-on-poultry-farms/?utm_source=Poultry+Health+Today+Newsletter&utm_campaign=cd663e2956-AAAP_antimicrobial_stewardship_PHT_1_8_2018_COPY_0&utm_medium=email&utm_term=0_5ac605299a-cd663e2956-252086165 □

## Genetically modified hens produce drug-containing eggs

JANUARY 30, 2019 BY MARK CLEMENTS IN WATTAGNET.COM

*Researchers may have overcome the difficulties of producing gene-modified chickens that lay eggs for use in medicines.*

The U.K.'s Roslin Institute has announced new transgenic chicken lines that can produce proteins in their eggs for the treatment of arthritis and some cancers.

The institute says its latest work optimizes and validates a transgenic chicken system for the cost-effective production of pure, high-quality, biologically active protein for therapeutic and other applications and that as few as three eggs from these birds can produce a clinically relevant dose.

While commercial drug production in eggs remains some time away, the work has offered proof of principle that the system is feasible and that it could easily be adapted to other therapeutic proteins.

Several research bodies have looked at genetically modifying chickens for production of proteins, including Japan's National Agricultural and Food Research Organization. However, Roslin notes the chicken has lagged behind in bioreactor development, despite it offering several potential advantages. Various mammals have been used, but producing transgenic birds has proved difficult.

### 100 times cheaper than conventional methods

Producing therapeutic proteins in the egg white of transgenic birds, however, could substantially lower the costs across the entire therapeutic production cycle, particularly when compared with cell culture systems.

The Roslin team has initially focused on two proteins that are essential to the immune system and that have therapeutic potential: a human protein called IFNalpha2a, which has powerful antiviral and anti-cancer effects, and the human and pig version of a protein called macrophage-CSF, which is being developed as a therapy that stimulates damaged tissues to repair themselves.

As few as three eggs were enough to produce a clinically relevant dose of the drug and, given that chickens can lay up to 300 eggs a year, the researchers say that their approach could be more cost effective than other production methods for some important drugs.

The approach is said to be more efficient and to deliver better yields than producing in other animal species which, if and when commercialized, would make treatments more affordable and open up new markets in developing countries. □

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## Gene-edited chickens planned in bid to halt next (human flu) pandemic

By Kate Kelland January 21, 2019 in Grainews

*London | Reuters* — British scientists are developing gene-edited chickens designed to be totally resistant to flu in a new approach to trying to stop the next deadly human pandemic.

The first of the transgenic chicks will be hatched later this year at the Roslin Institute at the University of Edinburgh in Scotland, said Wendy Barclay, a professor of virology at Imperial College London who is co-leading the project.

The birds' DNA has been altered using a new gene editing technology known as CRISPR. In this case the "edits" are to remove parts of a protein on which the flu virus normally depends, making the chickens totally flu-resistant.

The idea is to generate poultry that cannot get flu and would form a "buffer between wild birds and humans," Barclay said.

Global health and infectious disease specialists cite the threat of a human flu pandemic as one of their biggest concerns.

The death toll in the last flu pandemic in 2009-10 — caused by the H1N1 strain and considered to be relatively mild — was around half a million people worldwide. The historic 1918 Spanish flu killed around 50 million people.

The greatest fear now is that a deadly strain could jump from wild birds via poultry into humans, and then mutate into a pandemic airborne form that can pass easily between people.

"If we could prevent influenza virus crossing from wild birds into chickens, we would stop the next pandemic at source," said Barclay.

In research published in 2016 in the journal *Nature*, Barclay's team found that a gene present in chickens called ANP32 encodes a protein that all flu viruses depend on to infect a host. Laboratory tests of cells engineered to lack the gene showed they cannot be infected with flu.

Teaming up scientists at the Roslin, Barclay said the plan is to use CRISPR to edit the chicks' DNA so that only one part of the key protein is changed, leaving the rest of the bird exactly the same, genetically, as it was before.

"We have identified the smallest change that will stop the virus in its tracks," she said.

Roslin Institute scientists gained fame in 1996 as creators of "Dolly the sheep," the world's first cloned animal. They have also created gene-edited pigs to make them resistant to a virus.

Barclay said one of the biggest hurdles to this approach would be poultry producers' concerns about public acceptance. "People eat food from farmed animals that have been altered by decades of traditional breeding," she said. "But they might be nervous about eating gene-edited food." □

## Propane Updates

March 5, 2019

**NPGA REPORT**: Coming in to the close of February EIA weekly stock estimates and our monthly forecasts suggest that the US is generally well supplied with propane on a days of disposition basis. February ending days of disposition is believed to be in line with levels seen in 2017 and well above the levels of last year and those at the start of 2014. Increasing production will allow stocks to be rebuilt quickly but must contend with expected continued increases in exports. **Looking forward through 2019 we expect the US to be generally well supplied** but not to the extent seen in 2015 and 2016 where new supply growth was trapped in the US as export terminals were undergoing construction and coming to completion.

**SPOT PRICING** for propane at Mont Belvieu, TX was at $0.680/gal. on March 4, 2019. The highest spot price to occur this year was on Feb. 22nd at $0.720. The lowest price for the new year was on Jan. 1st at $0.630, which was $0.358 lower than a year ago. In 2018 the lowest price of the year was on Dec. 28th at $0.635 and the highest period occurred from late Aug. through early Oct. when prices consistently exceeded just over $1.00.

Allowing for an average of $0.41 per gallon for tariffs, handling and delivery to most areas, **the average current retail price is roughly $1.09/gal.** Larger accounts can often negotiate a lower price agreement by as much as $0.05/gal., or more. To follow Mont Belvieu, TX spot pricing: https://ycharts.com/indicators/mont_belvieu_propane_spot_price. □

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## President Trump Signs Farm Bill into Law

*On December 20, 2018, in Agricultural News, Farm Bill*

President Trump today signed into law the 2018 Farm Bill, marking the first time since 1990 that a farm bill has been enacted in the same year it was introduced. The House passed the 2018 Farm Bill on Thursday, December 13 by a vote of 369-47. 182 Republicans and 187 Democrats voted in favor. The passage comes one day after the bill passed in the Senate by a vote of 87-13.

Mike Brown, NCC president, and Harrison Kircher, vice president of government affairs attended the signing ceremony at the White House.

The bill combines USDA's export promotion programs for funding purposes, including the Market Access Program (MAP) and the Foreign Market Development (FMD) program. The new, consolidated program will be called the Agricultural Trade Promotion and Facilitation Program. MAP would continue to be funded at $200 million annually and FMD at $34.5 million annually.

*(continued on page 40)*

# Lameness problems in broilers

February 19, 2019 in Zootecnicainternational.com

**Laboratory submissions of commercial broilers raised in Delmarva have shown an increased trend in leg problems (lameness) that is often associated with chronic respiratory disease. Lameness is being detected in chickens as early as two-to-five-days of age and continuing through growout. Basically, two major types of lameness have been identified: femoral head necrosis-osteomyelitis and legs with different degrees of lateral deviation or angulations. Other skeletal disorders involving lameness such as kinky back have also been recognized.**

**Femoral head necrosis**. Clinically, these broilers look weak and dehydrated, remaining prostrated or down on their hocks and reluctant to move. According with the Kesting scoring system, these broilers exhibit levels of lameness in the 4 and 5 categories. Upon necropsy, carcasses reveal different levels of femoral head necrosis (osteomyelitis), bacterial synovitis, and subcutaneous abdominal cellulitis (also referred to as infectious process-IP). Thoracic and abdominal cavities display chronic stages of bacterial infection (airsacculitis, pericarditis, perihepatitis, pleuropneumonia). The crop and intestine of affected broilers are often empty whereas gizzards may be full of litter. These birds excrete a chalky diarrhea and have pasty vents.

**Leg angulations.** In contrast**,** birds with leg deviations show normal body weight and overall better health conditions. Kestin scores for these birds are in the 3 and 4 category so they also tend to be down on their legs. Hock joints are frequently enlarged and inflamed with skin abrasions resulting from traumatic pressure. Slipped tendons resembling a perosis-like condition may also be observed. Broilers of processing age may display synovitis with varying amounts of synovial fluid consisting of hemolyze blood or puss (bacterial synovitis). Common long bone deformities include proximal enlargement and angulations at the epiphyseal end of the tibia, bent of the tibia or other leg bones. Few angulated bones might also present different levels of tibial dyschondroplasia (TD) surrounded by a band of osteomyelitis but there is not a clear association between bone angulations and high TD incidence. Affected broilers may present with different levels of abdominal cellulitis (IP) and/or localized unilateral or bilateral chronic thoracic airsacculitis and pneumonia. However, broilers with leg deviations often have intestines filled with normal ingesta.

**Infectious agents**. Lameness is often diagnosed in association with chronic respiratory disease and *E. coli* is frequently isolated from internal organs (airsacs, liver, heart, lungs) as well as from bone marrow and synovial exudates of affected birds with the synovitis-osteomyelitis complex ('wing walkers"). Viral arthritis-tenosynovitis, a disease caused by avian reovirus infection, does not appear to be associated with femoral head necrosis ("wing-walkers") or angulated legs and enlarged hocks. Serological (ELISA) findings against reoviral infection have not revealed high titers and when sporadic high antibody levels have been found, they are not associated with arthritis-tenosynovitis. Moreover, no reoviral involvement has been detected by histopathology and virus isolation attempts of enlarged hock tendons have been unsuccessful.

**Non-infectious causes.** Based on gross and histopathological evaluations, femoral head necrosis and leg angulations have not been found in association with classical tibial dyschondroplasia (TD) or nutritional deficiencies such as rickets and perosis. Most of the histopathological report includes pathological fractures and bacterial osteomyelitis or both. Leg samples from young chicks have been reported with periosteal microfractures of the tibia or femur. While numerous studies have been conducted to study genetic, nutritional or infectious involvement with lameness, limited work has focused on investigating the role of the incubation-hatching process. Abnormal conditions associated with high temperature and low oxygen levels during the plateau stage of incubation has been reported to negatively impact bone development by affecting bone weight, length, thickness, and relative asymmetry in both chickens and turkeys. Anecdotal reports could also suggest that uneven and delayed hatches (referred to as "dragging hatching conditions") might play a role in early leg deformations as the chicks struggle to emerge from the shells during hatch.

**Age.** Birds of all ages are affected by both lameness conditions. Lameness in flocks is more evident after four-weeks of age due to rapid growth and stress on the skeletal system.

**Season.** Lameness has been detected through the year. However, a higher incidence has been associated with flocks during winter months.

**Breed.** Lameness has been detected in birds from all commercial breeds. Lameness is a common cause of culling and mortality particularly during the latter stages of broiler production. In the United States up to 6 % of broilers may have obvious skeletal abnormalities and losses of up to 2 % their flocks due to lameness can be seen.

However, many more broilers are subclinically affected presenting changes in gait patterns, reduced walking ability with detrimental effects for feed conversion and growth. Lameness has an increasing impact on welfare audits.

The longer time lame birds remain down on their legs, the greater the chance is for exposure to higher ammonia emissions, bites of darkling beetle larvae, and build-up heat from the litter. It seems that lame birds become more susceptible to skin injuries (scratches, abrasions) and secondary bacterial infections (subcutaneous infectious process, gangrenous dermatitis, respiratory-synovitis complex). Flocks affected with high rates of leg problems will likely experience increased culling rates, increased mortality, and increased condemnation rates.

The economic impact of leg problems is not limited to live production losses. In the processing plant, downgrades and carcass trims of lame birds may be also considerable. Lame birds likely serve as a source of contamination and increase food safety challenges. Angular leg deformities reduce the efficiency of automatic evisceration and deboning equipment and thus impact processing line speeds.

Leg problems and developmental disorders of long bones can be affected by genetics, breeder nutrition, rapid growth, incubation, infectious diseases, lighting programs, stocking density, non-use of antibiotics, floor eggs and environmental stressors caused through the life of the broiler. □

## Improving poultry health: Role of gut barrier and effect of antibiotic alternatives

*By Dr. Indu Upadhyaya, Asst Professor of Poultry Science, Tennessee Tech University*

The gut barrier plays a crucial role in maintaining poultry health and facilitating optimal production. The gut barrier comprises of trillions of luminal microbiota, a mucus layer, epithelial lining, underlying tissue, and associated immune cells. Together, these components facilitate absorption of nutrients while preventing the entry of harmful chemicals, toxins, and pathogens. The luminal microbiota produces vitamins and short chain fatty acids for host nutrition and organic acids and antimicrobial molecules for host defense against pathogens. Also, luminal microbiota promotes the development of the host immune system including mucus layer formation and generation of intestinal immune cells. Below the mucus layer, tight junction proteins such as occludins and claudins maintain the structural integrity of the epithelial layer. These are proteins that connect adjacent epithelial cells. Three important mechanisms mediate the safe transport of nutrients across the epithelial barrier. These include trans-cellular diffusion (crossing of nutrients across the cell membranes), carrier-mediated trans-cellular transport (movement of nutrients across the cell membranes facilitated by carrier molecule) and paracellular diffusion (transport of nutrients through the spaces between adjacent cells). Any damage to the tight junction proteins disturbs the paracellular diffusion leading to unregulated/unrestricted movement of chemicals eventually affecting host health.

Several previous studies have investigated the effect of antibiotic growth promoters (AGP) on gut health including gut barrier integrity. However, as AGPs are being phased out globally due to their perceived adverse effects, novel research is focusing on developing antibiotic alternatives for promoting poultry health, safety, and production. Extensive research conducted by our group and others has identified several phytochemicals (trans-cinnamaldehyde, carvacrol, thymol, eugenol, caprylic acid, Beta-resorcylic acid, etc.), probiotics (*Lactobacillus*, *Lactococcus* spp.) or their metabolites that are effective in promoting the health and safety of broiler and layer chickens through pathogen control. Mechanistic analysis has revealed that compounds such as trans-cinnamaldehyde, caprylic acid, and Beta Resorcylic acid are effective in reducing the motility and colonization efficacy (attachment, invasion, and translocation) of poultry associated pathogens including *Salmonella* and *Campylobacter jejuni* on chicken intestinal epithelial cells. The aforementioned compounds also reduce the expression of critical virulence genes and proteins that facilitate pathogen colonization in the gut of chickens. However, very little is known about the effect of these compounds on gut barrier integrity including effects on ileal and cecal microbiota composition, mucus production, expression of tight junction proteins, and levels of secretory immunoglobulin.

At the Center of Excellence in Poultry Research at Tennessee Tech University, as part of a multipronged approach, we aim to investigate the effect of various prebiotics, probiotics, phytochemicals or their combinations on gut barrier integrity and function with an ultimate goal to rear healthy, pathogen free chickens and produce wholesome and safe poultry products for human consumption. ◘

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## Ammonia and Your Poultry House Environment

Ammonia is an inescapable reality in poultry houses. By understanding its relation to nitrogen, litter moisture and other environmental factors, producers can maximize fertilizer value of litter, decrease ammonia gas volatilization and enhance litter amendment effectiveness.

Take a minute to **read the latest on ammonia** and learn how to profit from it. By Jones-Hamilton.com ◘

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## Ammonia Generation & Nitrogen

Gain insight on the relationship between ammonia and nitrogen, and how to leverage it for increased profitability.
**Read more** from Jones-Hamilton.com ◘

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## Litter Moisture in Dry Winter Months

When litter is too dry—a condition we often see from late January to early March when outside relative humidity tends to be low—multiple bird health and litter management challenges arise. **Read more** from Jones-Hamilton.com ◘

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## Rethink the Golden Rules of Incubation

"Your incubation results might be affected by a lack of accuracy in the rules you're applying. The rules of incubation have been derived from multi-stage methodology and stay ingrained in our habits even though they are ready for an update in the single-stage era," remarked Roger Banwell, senior incubation expert at Petersime.

*Click here for full article* ◘

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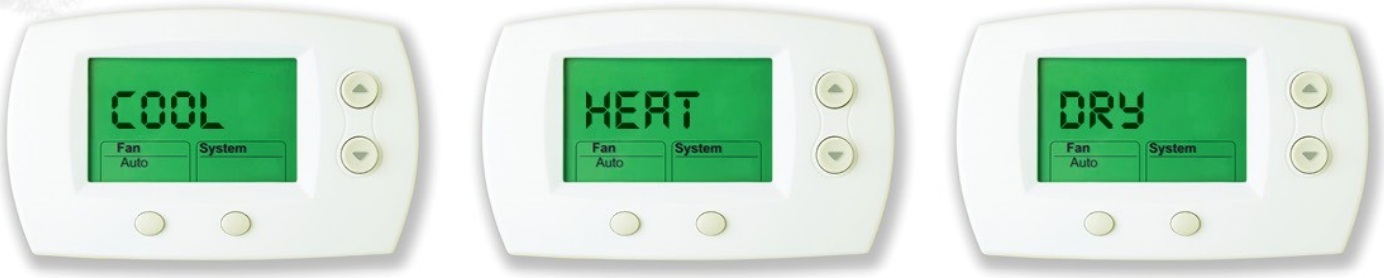


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## Researchers conclude livestock have no detectable effect on climate

Dec. 5, 2018 editorial by Amanda Radke in BeefMagazine.com

*Good news — researchers have debunked the cattle and climate change myth! Check out the latest findings and share this blog post far and wide!*

Cow burps are destroying the ozone layer — we've all heard that one, and frankly, it's time for the industry to ditch that myth once and for all.

As our industry zeroes in on topics of sustainability and ways we as beef producers can improve for the better, I continue to beat the same drum — cattlemen and women already do a spectacular job of managing our land and water to produce more beef using fewer resources.

Simply stated, beef production isn't just sustainable; it's regenerative. And despite what the naysayers claim, cattle grazing and consuming by-products of crop production play a critical role in our ecosystem.

Our consumers should be able to enjoy beef without guilt because it's good for them and the planet. Period.

Yet, the link between cattle and climate change really seems to have caught hold. From the Meatless Mondays folks to the increasing sentiments that plant-based diets are far superior, we have a tough road ahead of us if we are ever going to change public perception and continue to foster feelings of trust and confidence with our consumers about our product.

New research conducted by agrobiologist and scientific researcher Albrecht Glatzle is a good place to start. He is a professor with INTTAS (Initiative for Research and Extension of Sustainable Agrarian Technologies), Filadelfia, Paraguay.

According to newly published research by Glatzle, who has written over 100 scientific papers and two textbooks, "There is no scientific evidence, whatsoever, that domestic livestock could represent a risk for the Earth's climate."

That's news so good you better read it twice! New research is proving what we've known all along, and now it's our job to spread this research far and wide.

As printed in the Climate Dispatch, Glatzle writes, "Our key conclusion is there is no need for anthropogenic emissions of greenhouse gases (GHGs), and even less so for livestock-born emissions, to explain climate change. Climate has always been changing, and even the present warming is most likely driven by natural factors.

"Between 1990 and 2005, the world cattle population rose by more than 100 million head (according to FAO statistics). During this time, atmospheric methane concentration stabilized completely.

"These empirical observations show that livestock is not a significant player in the global methane budget. This appreciation has been corroborated by Schwietzke et al. who suggested that methane emissions from fossil fuel industry and natural geological seepage have been 60–110% greater than previously thought," he writes.

"We could not find a domestic livestock fingerprint, neither in the geographical methane distribution nor in the historical evolution of the atmospheric methane concentration. Consequently, in science, politics, and the media, the climate impact of anthropogenic GHG emissions has been systematically overstated.

"Livestock-born GHG emissions have mostly been interpreted isolated from their ecosystemic context, ignoring their negligible significance within the global balance. There is no scientific evidence, whatsoever, that domestic livestock could represent a risk for the Earth's climate."

Please share this blog post on social media today to help spread this message with our consumers. As the industry attempts to tweak and fine-tune this already well-oiled beef producing machine, this is an important conclusion to share as it truly reinforces what we've always known — beef producers were the original environmentalists and conservationists.

We've been improving the soil through cattle grazing for centuries as cattle aerate the soil with their hooves, fertilize it with their manure, reduce the spread of wildfires by grazing brush and promote new growth with each bite. Plus, by keeping grasslands intact instead of converting to monoculture farming or commercial/residential development, cattle help store more carbon and promote biodiversity of the soil.

It's about time we get credit for our environmental efforts, don't you think?

*The opinions of Amanda Radke are not necessarily those of beefmagazine.com or Farm Progress.* □

## Nonprofit allots $3 million for cell- and plant-based product research

By Tom Johnston on 2/8/2019 in MeatingPlace.com

Good Food Institute (GFI), a nonprofit group that works with scientists, investors and entrepreneurs to develop meat alternatives, announced the recipients of $3 million to fund their projects.

Fourteen winners were whittled down from 66 submissions from 18 countries and will be funded through GFI's inaugural Competitive Research Grant Program.

The resulting research in critical areas of plant-based and cell-based meat R&D will be shared with the entire scientific community and "good food industry," the organization said. *(continued on next page)*

## Nonprofit allots $3 million for cell- and plant-based product research *(continued from previous page)*

"The tremendous potential for any one of these research projects to accelerate the plant-based or cell-based meat industry demonstrates the phenomenal impact of marshaling funding to this space," GFI officials said.

The winning projects span the breadth of the manufacturing process: from crop breeding to product formulation for plant-based meat and from cell line development to bioprocess scale-up for cell-based meat. The funding will support research worldwide in Norway, China, Israel, the United Kingdom, Serbia, Canada, Estonia, and the United States. □

## Tyson: Expect new alternative protein products soon

BY ROY GRABER ON FEBRUARY 7, 2019 IN WATTAGNET.COM

While the company is investing in alternative proteins, it remains committed to its poultry, pork and beef businesses. Tyson Foods continues to transition from a meat and poultry company to a protein company, and the company's CEO said consumers can expect Tyson to introduce new alternative protein products in the near future.

While Tyson Foods is the largest broiler company in the United States and also a major processor of turkey, beef and pork products, in recent years it has been investing in the plant-based protein and cell-cultured food sectors.

Tyson Foods CEO Noel White, speaking during a quarterly earnings call of February 7, said that the company will continue to invest in its traditional meat protein businesses, but it is also "committed to incremental growth in alternative protein."

"We are combining our creativity, our scale and our resources to make great taste in protein alternatives more accessible for everyone both domestically and internationally," said White. "We will be leveraging all the resources we have at our disposal. Our insights, our innovation, manufacturing, sales, distribution and a global platform. And in the weeks ahead, you'll be hearing more from us as we announce new products in the alternative protein space."

In recent months, Tyson Foods has invested in alternative protein companies Future Meat Technologies, Memphis Meats, Beyond Meat and MycoTechnology. However, Tyson Foods has also been actively acquiring more traditional protein companies, having acquired Tecumseh Poultry and Keystone Foods in 2018, and Original Philly Holdings and AdvancePierre Foods in 2017. On February 6, Tyson also announced it has entered an agreement with Brazil-based BRF to acquire its operations in Europe and Thailand. That proposed acquisition involves four processing facilities in Thailand, one in the Netherlands and one in the United Kingdom.

Tyson Foods, according to the WATTAgNet Top Poultry Companies Database, processed 174.8 million pounds of ready-to-cook chicken on a weekly basis in 2017. During that same year, Tyson Foods slaughtered 349 million pounds of live turkeys. □

## So long 'clean meat', hello 'cell-based meat'

DEC. 27, 2018 BY AUSTIN ALONZO IN WATTAGNET.COM

*The phrase "clean meat" is on the outs. Thank goodness.*

### The dirt on clean meat

Earlier in 2018, WATT PoultryUSA took a look at the technology and the burgeoning business of growing animal tissue from cell cultures. One of the hang-ups surrounding the concept is what to call it. Some proponents call it clean meat while some opponents call it lab-grown meat. Cultured meat seemed a neutral yet factual term, so we settled on that in our coverage.

One of the most prominent firms working on the technology, Memphis Meats, is abandoning the term clean meat altogether. Dr. Eric Schulze, Memphis Meats' vice president of product and regulation, shared the reasoning behind the startup company's decision to distance itself from the term at the National Chicken Council's annual meeting in Washington in October 2018.

"We didn't come up with the term, but we were using it," he said. "It just didn't work, and for many reasons, we wanted to quickly get away from that term and use a term that was much more factual, inclusive and accurate, so we use the term cell-based, as in animal cell-based meat. We think that's a much better way for us to have a substantive discussion."

Good! In my judgement, the phrase clean meat creates the false dichotomy that one product is clean – uncontaminated and pure – and the other, conventionally produced meat, is dirty. Ditching that phrase will likely strip away the air of sanctimony that comes with the product and maybe prevent its purveyors from being flatly dismissed by the majority of the animal agriculture industry.

### The rub with cell-based

Cell-based meat, on its face, is a massive improvement over clean meat for the aforementioned reasons. I maintain two criticisms of this term, however.

First, there's the issue of creating more confusion for the consumer. The product isn't on the shelf yet, but when it is: Won't cell-based be a head scratcher? Not unlike the labels organic, all-natural, hormone-free, steroid-free, etc. currently affixed to many packages, I fear using this term will make people wonder if there's something out there that isn't cell-based.

Second, cell-based requires explanation. I suppose animal cell-based clears up that the product isn't plant cell-based. But, in essence, aren't both conventional meat and tissue created from cell culturing both animal cell-based products? □

## Ag Watchdog Newsletter

Feb. 23, 2019 Center for Consumer Freedom

If not already familiar with The Center for Consumer Freedom, this group does really great work to help educate the public and to stand up to activist groups and movements that do not support animal agriculture. To their Executive Director Rick Berman, consumer freedom in part means that "people should not be lead around by the nose with bad information," as he told "60 Minutes" co-host Morley Safer.

Their recent newsletter features such articles as:

- Cell-Cultured Meat Startup Seeks Another $200 Million
- Study: Lab-Grown Meat May Be Worse For The Environment
- European "Sustainability" Activists Lobby Congress
- Burgerville Joins Animal Rights Council

To subscribe to this newsletter go to https://www.consumerfreedom.com/subscribe/ ◻

## 'Broiler Meat Signals' book released at IPPE

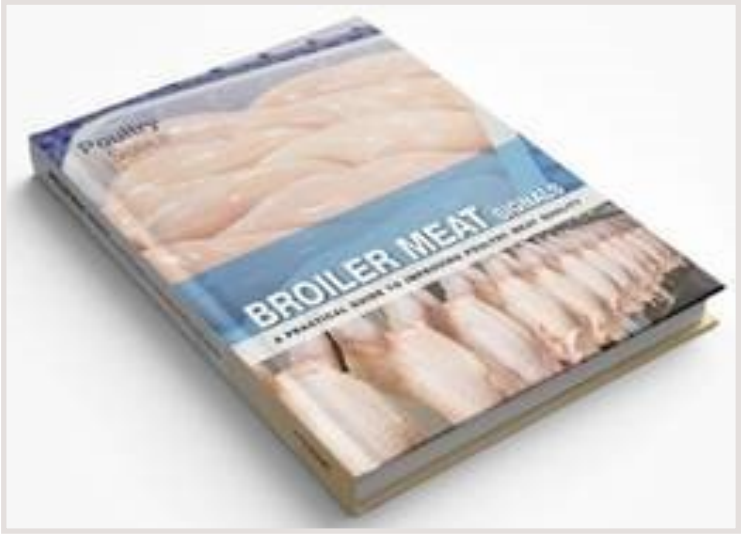
JANUARY 29, 2019 INFORMATION BY ROY GRABER FROM WATT-AGNET.COM

The new book, "Broiler Meat Signals – A Practical Guide to Improving Poultry Meat Quality" was officially launched during a special event during the 2019 International Production & Processing Expo (IPPE) in Atlanta.

The book, written by Piet Simons and Wim Tondeur and published by Roodbont Publishers BV, contains practical information about broilers and all further steps in processing.

The 192-page book contains essential practical information about every step in poultry meat processing. With over 750 color pictures, it is a useful tool for people working in slaughterhouses, catching teams, broiler farmers, agricultural students and anyone interested in the poultry industry. The book contains practical tools and modern insights to guarantee an efficiently produced, safe, healthy and tasty product.

Copies are available via the Roodbont webshop. ◻




*"Broiler Meat Signals – A Practical Guide to Improving Poultry Meat Quality," by Piet Simons and Wim Tondeur (Roodbont Publishers)*

## New Evidence Suggests Link Between Vegetarianism and Depression

January 2, 2019 from HumaneWatch.org

A strict vegetarian diet has long been scrutinized for the toll it can take on a person's physical wellbeing, but a new scientific report raises another important question: what about a vegetarian's mental wellbeing?

There's a good deal of medical literature associating deficiencies of B12 and omega-3 with depression. These essential nutrients are most commonly found in meat, fish, and other animal products. So it's not necessarily surprising to hear that vegetarianism is linked with depression.

Even so, the report details a number of worrisome findings, citing data from a compilation of surveys examining different groups in different countries but with similar findings: vegetarians are significantly more prone to depression than the omnivorous majority of the population. A sample of the findings is below.

- A longitudinal study of 14,247 young women found that 30 percent of vegetarians and semi-vegetarians had experienced depression in the previous 12 months, compared to 20 percent of non-vegetarian women. (Baines, 2007)
- A study of 4,116 Germans including vegetarian, semi-vegetarian and non-vegetarian people found that more vegetarians suffered from depressive disorders in the previous month, the previous year, and throughout their lifetime.
- In a British study, 9,668 men who were partners of pregnant women took the Edinburgh Postnatal Depression Scale. Seven percent of the vegetarians obtained scores indicating severe depression compared to four percent of non-vegetarians.
- Investigators from the College of William and Mary examined depression among 6,422 college students. Vegetarian and semi-vegetarian students scored significantly higher than the omnivores on the Center for Epidemiologic Depression Scale.



This Psychology Today article confirms the findings of the report but challenges them by citing three studies showing no meaningful difference between the different dietary groups. One concern: those three studies use significantly less people to arrive at their numbers—486, 620, and 138 respectively. Such low and unrepresentative numbers cannot be credibly compared to studies involving roughly 5,000 to 15,000 people.

The United States is currently facing an invisible but ever-present crisis of people facing depression and loneliness. 30 years ago, 1 in 50 Americans took an antidepressant medication and, as of 2014, 1 in 9 Americans do. That rate has almost doubled since 2010 and more than tripled since 2000, revealing the widespread reach of this crisis.

In 2017, 47,000 Americans took their own life, with the suicide rate increasing 33 percent between 1999 and 2017.

In fact, American suicide rates are at the highest they've been in 50 years.

A Google search of "vegan isolation" reveals that many vegans struggle with issues of isolation, not because the diet calls for it, but because it's a side-effect of the strict lifestyle which excludes all animal products.

The correlation of vegetarianism and depression is cause for concern. Additional and better research is needed to shed more light on this critical issue. □

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## Do voters know the increased cost of cage-free eggs?

FEBRUARY 19, 2019 BY TERRENCE O'KEEFE IN WATTAGNET.COM

*Ballot initiatives mandating changes to animal husbandry practices, like cage free for hens, have been approved by the same voters who routinely purchase eggs from cage-housed hens.*

In a recent blog post, Why don't we vote like we shop?, Jayson Lusk discussed his consumer research into the puzzle of why California voters have voted to outlaw the same cage-produced eggs they overwhelming select when purchasing groceries. He explained that this vote-buy gap is not the result of the non-buyer hypothesis, which is understandable, as American Egg Board research shows 94 percent of U.S. households purchase eggs.

I share Lusk's interest in understanding the vote-buy gap, and I think there are parallels found in referenda on other subjects. For instance, voters in the states where I have resided have been quick to approve bond referenda for schools and parks but have been equally quick in voting down tax increases required to ultimately retire the bonds.

In the case of the bond referenda, voters are made aware of the potential benefit to the community -- new schools and parks -- but not how they will be paid for or the cost to them as an individual. When it comes time to approve that increase in the sales tax rate to pay off bonds or to fund another new project, there is a real cost associated with that. Would the votes have come out differently if the ballot had the retail prices for cage-produced and cage-free eggs printed beside them?

Explaining the vote-buy gap may be simple. When we pay for items ourselves, whether in a store or restaurant, we know the price and we know that the money is coming out of our own wallets. When deciding at the polls, I think voters don't know the cost and **most think the money is coming out of someone else's wallet**. □

## BREAKING NEWS: China Commits to Soybean Purchases, Live Analysis

Feb. 23, 2019 from AgWeb Market Weekley

WATCH LIVE: Analysis of breaking news that China will purchase an additional 10 million metric tons of soybeans.

For other market commodity reports and outlooks go to www.farmjournal.com/markets/

## China Proposes It Could Buy Additional $30 Billion A Year Of U.S. Ag Products

China is proposing that it could buy an additional $30 billion a year of U.S. agricultural products including soybeans, corn and wheat as part of a possible trade deal being negotiated by China and the United States, according to a report from *Bloomberg*.

Click here for full article

## Soybean Producers Disappointed 90 Days Brings No Tariff Conclusion

Washington, D.C. March 1, 2019 from the American Soybean Association

After nearly three months of negotiations, President Trump and Chinese President Xi could not reach a conclusion and bring to an end tariffs imposed on soy growers by China since July 2018, a measure that would have brought great relief to soy growers.

Davie Stephens, a soybean grower from Clinton, Kentucky, and American Soybean Association (ASA) president stated, “We are glad that talks between these two countries will continue without the tariff hike previously expected at the 90-day deadline later this week, but we need resolution and are discouraged that it’s still hard to see a tangible end in sight.”

The Chinese government has recently announced and begun to make good on government-to-government commitments to purchase American soybeans totaling around 20 million metric tons (735 million bushels), which is a positive step. However, ASA continues to push for more than piecemeal purchases and see open access to the China market restored through the removal of tariffs.

The value of U.S. soybean exports to China has grown exponentially the past 20 years, from $414 million in 1996 to $14 billion in 2017. China imported 31 percent of U.S. production in 2017, equal to 60 percent of total U.S exports and nearly one in every three rows of harvested beans. Over the next 10 years, Chinese demand for soybeans is expected to account for most of the growth in global soybean trade, making it a prime market for the U.S. and other countries. While ASA is pleased that the Administration has announced that negotiations have been positive and will continue past Trump’s imposed 90 day window, soy growers continue to urge the Administration to rescind the tariffs and instead make soybeans a part of reducing our trade deficit with China.

## Animal Agriculture Alliance debuts Sustainability Impact Report

*Report highlights animal agriculture's commitment to continuous improvement*

January 14, 2019 – Today, the Animal Agriculture Alliance released its "Sustainability Impact Report" focusing on animal agriculture in the United States. The report highlights how the animal agriculture industry shares the same values as today's consumer with its never-ending commitment to animal care, environmental stewardship, responsible antibiotic use, food safety and nutrition. To access the report, go to https://www.animalagalliance.org/engage/#sustainability.


The 33-page report covers nine industries: dairy, beef, veal, pork, chicken, turkey, egg, sheep and aquaculture. "Animal agriculture has made great strides in environmental stewardship, animal welfare and overall sustainability over the years," said Kay Johnson Smith, Alliance president and CEO. "As new technology and research become available, the industry will continue to innovate and improve."

**Environmental stewardship highlights**:

- According to the Environmental Protection Agency, agriculture accounts for a total of 9 percent of U.S. GHG emissions while livestock production is only 3.9 percent.
- Dairy farmers decreased their carbon footprint by 63 percent from 1944 to 2007.
- Since 1977, cattle ranchers have reduced their carbon footprint by 16 percent.
- Pig farmers decreased their carbon footprint by 7.7 percent and their water use by 25.1 percent from 1960 to 2015.
- The egg industry reduced its carbon footprint by 71 percent and its water use by 32 percent since 1960.

**Animal welfare highlights**:

- Hens under the United Egg Producers Certified program account for 95 percent of all the nation's laying hens.
- The National Chicken Council (NCC) developed the NCC Animal Welfare Guidelines and Audit Checklist, which have been widely adopted within the chicken industry. These guidelines were updated in 2018.
- As of January 2019, more than 72,000 pig farmers and farm employees were Pork Quality Assurance Plus certified.
- By 2016, 98 percent of the U.S. milk supply came from dairy farms and cooperatives enrolled in the Farmers Assuring Responsible Management program.

**Nutrition highlights**:

- Milk provides nine essential nutrients and is also the number one food source of calcium, vitamin D and potassium for all Americans ages 2 years and older.
- Today's pork is 16 percent leaner and 27 percent lower in saturated fat compared to 20 years ago.
- Lamb is an excellent source of vitamin B12, selenium, zinc and niacin.
- One 3-ounce serving of lean beef provides about 50 percent of the recommended daily value of protein.
- One large egg has varying amounts of 13 essential vitamins and minerals, six grams of protein and only 70 calories. ◻

## Meatpackers' many approaches to the multi-layered labor problem

By Tom Johnston on 1/22/2019 in MeatingPlace.com

State laws and changing generational values in the workplace are just a couple of many factors conspiring to make labor the largest challenge facing the meat industry.

A record-low national employment rate, immigration policies, competition for workers from other industries with similar or better pay rates, and short staffing in customer channels are piling on, too.

The hard job behind producing historic amounts of product is getting harder. Consumer demand is high, and consumers are highly demanding. They and meat industry customers increasingly need more specialization — and more of the work cut out for them.

So far showing minimal restraint, however, the meat industry is more likely to accelerate its development of alternative solutions to its need for more hands now and rethink its structure to address overhead and efficiency issues in the future. Think everything from raffling off cars to re-sizing and focusing new plants in core competencies.

Read more about how meatpackers are working around the labor shortage in our Issues feature story, "A thousand cuts," in the January edition of **Meatingplace** magazine. ◻

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## US poultry industry challenged by labor issues

BY ROY GRABER ON FEBRUARY 18, 2019 in WattAgNet.com

*Lack of qualified workers is a major challenge, Mike Donohue tells IPPE crowd*

The U.S. poultry industry currently is facing a shortage of qualified workers, with turnover rates as high as they have been in a decade, Mike Donohue, vice president of Agri Stats, said while speaking at the Poultry Market Intelligence Forum at the 2019 International Production & Processing Expo (IPPE) in Atlanta, Georgia.

Donohue, speaking on February 13, pointed out that in many parts of the country, the unemployment rate is between 2 and 3.5 percent, which is both good and bad.

"Hallelujah! It's a wonderful thing. Americans are working. There's plenty of jobs for our kids," said Donohue. "In many ways this is a good thing, but the difficulty is finding labor."

And even when companies hire workers to fill open positions, that doesn't mean those positions will be occupied long. Donohue showed a slide that revealed that the weekly turnover rates are increasing. For first processing positions the weekly turnover rate is around 1.6 percent, up from the previous year, and for further processing positions, the turnover rate is closing in on 2 percent, which is the highest it has been in a decade.

However, Donohue said worker shortages and high turnover rates are not unique to the poultry sector.

Donohue said: "You talk to your friends working in other industries, and they'll echo the same sentiments that we have: 'How do I find labor, and how do I find good, quality labor?"

### Wage trends

Labor shortages are coming in spite of meaningful increases in average wages for poultry industry workers.

Donohue said at the present time, the broiler industry's average wage rate without benefits is closing in on $16 per hour. That compares to an average of around $7.50 in the mid- to late 1990s.

He added that the costs of fringe benefits for employees has also gone up since that time. □

## Rendering: Part of the Solution for Waste Management

ATLANTA, Ga. – Feb. 19, 2019 – "The rendering industry generates more than $10 billion in annual economic activity, employs thousands of people across the country and recycles 'the rest of the animal.' It transforms huge volumes of raw leftovers from livestock and poultry processing into ingredients for new products," said Nancy Foster, president of the National Renderers Association (NRA) and Fats and Proteins Research Foundation, during her presentation at the International Rendering Symposium, held in conjunction with the 2019 International Production & Processing Expo (IPPE) in Atlanta. The NRA and U.S. Poultry & Egg Association sponsored the program.

Foster remarked, "Our mission is to advocate for a sustainable food chain, public health and the environment through the production and marketing of rendered products." Foster expressed that NRA's focus is in sustainability, advocacy in both regulatory and legislative areas, new markets, and giving businesses biosecurity, communications and membership development. "We are not adding to waste. We are a part of the solution for waste management," commented Foster.

"Rendering impacts sustainable agriculture. Our industry provides a cycle of sustainability to the food industry, ensuring safety throughout the food chain," commented Dr. Ansen Pond, director of quality assurance and food safety for rendering and wet pet food ingredients at Pilgrim's, during his presentation on "Rendering 101 – The Basics of the Rendering Industry and Process." Dr. Pond explained that materials come mainly from inedible parts of cows, poultry and swine, with the rendering industry processing more than 170 million by-products daily.

Sarah Hubler, vice president of business development, Collings Nutrition Solutions, mentioned that "most 'pet parents' are interested in knowing how renderers handle raw materials and how regulations and laws work for the rendering industry." During her presentation on "Being a Voice to Consumers," she reflected that pet nutrition communication can be difficult due to the high emotions and protectiveness people have towards their pets. Hubler observed that pet feed ingredients are often misunderstood and/or not trusted to be of high quality, remarking that "a lack of information and misinformation on nutrition can cause pet parents to make decisions that may actually harm their pet." □

## Solar: Important Information Regarding TVA's Green Power Providers Program

For anyone considering a solar project, please note that TVA has announced that their Green Power Providers program (GPP) will be closed to new applications beginning January 1, 2020.

"Because we recognize that the existing program does not meet current market needs, we look forward to partnering with installers and Local Power Companies to explore approaches that better align with consumer expectations. **This transition will not affect current GPP participants and applications in the pipeline."**

If you have questions or concerns, please reach out to the GPP team via email at GreenPowerSwitch@tva.gov or call 866-673-4340. □

## Ordinance to Give Legal Rights to Animals

The Nonhuman Rights Project, which is attempting to gain legal rights for animals to sue people, held a Facebook Live segment this week. Its leader, Steven Wise, announced the group will be introducing a local ordinance to grant legal "personhood" to animals this spring—the first in the world. While the locality is being kept secret, Wise has previously identified California as a state with strong "home rule" laws that would allow such a local ordinance.

The Nonhuman Rights Project is currently suing to liberate an elephant "client" from the Bronx Zoo and is planning to visit Capitol Hill and introduce its work to Members of Congress. During the segment, Wise stated that under current law, his dog is his "slave," and declined to answer whether animal rights will extend to marriage. ◻

## Germany: Tech Developed to Prevent Culling of One-Day -Old Male Chicks

Technology has been developed in Germany to prevent the culling of one-day-old male chicks. The first eggs produced by hens that have been through the new process have appeared on the country's supermarket shelves. Animal welfare campaigners have been increasing pressure on the egg industry to end the practice of culling male chicks, with the potential threat of a ban in some countries.

*Click here for full article* ◻



## Research: What makes chickens happy?

*Dec. 19, 2018 by Tony McDougal in PoultryWorld.net*

*How do you know whether your birds are happy? Is it a case of looking to see how much time they spend preening or the way they run for their food?*

Researchers from the University of Guelph in Canada are looking to measure a chicken's happiness by putting 16 breeds through physical fitness and behavioral tests.

They are watching how well birds scramble over a barrier for food, how excited they become when they play with a fake worm and are tracking traits like weight, growth rate and meat quality which they hope will be useful to the industry.

Poultry breeding companies Cobb, which is owned by Tyson Foods, and Aviagen are providing birds for the study, including breeds that are widely used.

Lead researcher Stephanie Torrey said if we can provide birds with opportunities to perform things that they perhaps find pleasurable then maybe that can counter balance the negative aspects."

But scientists know that happy birds could end up being expensive ones, so they are also monitoring which breeds grow more efficiently.

"Our ultimate goal is to find breeds that have good welfare but also good productivity and good disease resistance within our environments here."

They hope their study will lead to a better understanding of chicken happiness.

The Guelph study is being funded by the Global Animal Partnership, which certifies corporate animal welfare standards. In 2016 it launched a campaign to encourage companies to switch to slower growing breeds.

Since then, it has acknowledged that chicken welfare is more complicated than just growth rate and is now pushing for a "better chicken" and hopes the study will help define what that entails.

Anne Malleau, the group's executive director, said some of the researchers' tests may seem far out, but added that until relatively recently, enrichments were seen as a fringe idea. ◻

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## Synthetic egg company partners with German poultry giant

Feb 25, 2019 in *PoultryWorld.net*

The past few years have seen egg farmers in Europe battling to keep up with consumer requirements. First battery cages were banned. More recently their replacement, enriched cages, have come under scrutiny after less than a decade in use – could a synthetic egg fit the bill? Some of Europe's largest poultry businesses seem to think it might.

Type "Just Egg Scrambled" into YouTube and you will receive links to nearly a hundred thousand videos. Scroll through the top selection and, rather than cooking tutorials, most videos will be vegan cooks reviewing a scrambled egg substitute produced by San Francisco start-up JUST Inc – and they are almost universally excited about it. Understandable. But watching one of the videos gives an indication as to why – it scrambles like a normal egg into a texture that would be familiar to anyone who has ever cooked the dish. What's more, those who have tasted it (it's currently only on sale in the US) say it manages to replicate the taste and texture of eggs incredibly well. To top it off, JUST says that the nutritional elements are close to that of a real egg, minus the cholesterol. Poultry producers – be aware.

### Product Range

The secret is mung beans, which contain a protein that scrambles like egg when warmed through, along with a complex array of other plant proteins that mix together to synthesize eggs. And it is just a start for the company founded in California back in 2011 by Josh Balk and Joshua Tetrick. The duo first brought Beyond Eggs to the market in early 2013, a powdered egg supplement that it later pulled from retail (but continued to sell to food service companies). Its flagship product, Just Mayo came later that year, and since then the range has grown to include cookie dough, a nutrient-rich porridge called Powder Gari aimed at developing nations and Just Egg – the scrambled egg substitute. It is also developing cultured chicken, produced entirely from replicated cells grown in a lab (***see box, cell-produced meat***).

### Other synthetic foodstuffs

Meat and egg substitutes are undoubtedly growing in popularity, and there is serious money being invested in finding ways to reduce food's environmental impact. **They broadly fall into 2 categories:**

1. those produced with plant proteins to imitate the texture and taste of meat,
2. those that actually recreate meat by growing cell cultures in a lab.

The list below starts with straightforward meat-replacement products and ends with the most cutting edge work to reproduce real meat.

**Beyond Meat**

Creates burgers and sausages purely from plants and says that: "By shifting from animal, to plant-based meat, we can positively and significantly impact 4 growing issues attributed to livestock production and consumption: human health, climate change, natural resource depletion, and animal welfare."

**The Impossible Burger**

Impossible Burger arguably takes it a step further, using a genetically modified molecule that it says gives its burgers the juicy, meaty taste that vegetable-based meat substitutes often lack.

**JUST Chicken**

Not content with replicating egg with plant compounds, JUST is also working on a cell-cultured chicken nugget, which it hopes to launch this year. It has successfully created poultry meat from cells gathered off the feather of a chicken – without killing the animal.

**Aleph Farms**

At the end of 2018, Israeli tech firm Aleph Farms produced a steak from cells in a lab that had a muscle-like texture. Previously cell-grown meat had only been produced in unstructured forms like nuggets or burgers. The company achieved this by using a mixture of different cell types grown on a 'scaffold'. The cost, too, is significantly lower. The first beef burger to be grown in a lab cost about € 250,000 [1 euro = $1.13] to make, whereas a small strip of the steak was made for just $50. Didier Toubia, the co-founder and chief executive of firm said at the time: "It's close and it tastes good, but we have a bit more work to make sure the taste is 100% similar to conventional meat. But when you cook it, you really can smell the same smell of meat cooking."

### On a mission

Why go to the effort? "JUST is on a mission to build a food system where everyone eats well," chief executive Joshua Tetrick tells *Poultry World*. He is evangelical about the potential that research has to supplant or even replace conventional poultry production. While he feels there will be a place for conventional livestock production in 10 years' time, it will be part of a food system that relies on synthetic production as well. "New methods of producing food are going to be required, as population projections soar to 9.7 billion by 2050. In my opinion, a decade from now, farming will take many forms – some new, some conventional."

*(continued on next page)*

## Synthetic egg company partners with German poultry giant *(continued from previous page)*

**Growth**

For anyone thinking that this is still some way away, consider the company's successes to date – and the money behind it. According to reports it has raised more than US$ 120m in funding – some of which has come from seriously high-profile investors intent on changing the world as much as attracting a return. Think Bill Gates, or Hong Kong-based billionaire and philanthropist Li Ka-shing.

Its scrambled egg product launched in the US in October last year and sold the plant-based equivalent of 3 million chicken eggs in its first 4 months. It's not the lowest cost either – eggs are priced on par with 'premium' egg equivalents, and cost between 2- and 3-times as much as the cheapest egg on the market. But, as Mr. Tetrick says: "As we're always working on improving the functionality of the product, we're also working to bring the cost down, which will happen as the product becomes more widely available around the world."

And it will soon be available in Europe. In January this year the company announced a new partnership with German poultry giant PHW Group, following a partnership struck last summer with Italian egg product expert Eurovo to produce the product here in Europe under license. At the time, Eurovo Group president Siro Lionello said: "The story of Eurovo started in Italy in the middle of the last century and a new and exciting chapter is about to begin with JUST. Partnering with JUST will allow Eurovo to include a non-animal product in our portfolio. "Balancing modernity and tradition while embracing changing consumer preferences and reducing our environmental footprint is a cornerstone of our business and this relationship ensures that this approach will continue."

**Unlikely partnership?**

It may seem an unlikely step for a poultry business to join with a company that, on the face of it, undermines their core offering. But consider the shift – eggs produced by hens are a variable product and their production is influenced by a wide range of factors, like disease, feed cost fluctuations and the politics of farming. Synthetic proteins, on the other hand, are created in a lab from controllable products. It's not hard to see the attraction for a company that sits between the demands of retailers and the expectations of farmers.

**Growth**

For JUST, it is a perfect relationship to strike up. "Partnering with egg companies around the world is an important part of our growth model," explains Mr. Tetrick. "JUST will develop the technology (finding, sourcing and developing the raw material or building blocks), do the upstream manufacturing and product development using conventional and novel processing technologies.

"Our partners will do the downstream manufacturing including blending and bottling of JUST products as well as warehousing, multichannel distribution and merchandising. The latter is something that our partners like Eurovo and PHW know how to do well and have been doing for decades. Partnering with JUST allows our partners to expand and diversify their offerings, bringing new and innovative products that suit consumers' evolving preferences.

PHW's chief executive Peter Wesjohann adds: "It's great news that PHW will be able to offer JUST Egg to European consumers – a product that has exceeded all expectations in the United States and is on a par with conventional eggs. "We will use all of our sales experience and market knowledge to ensure that JUST has the best possible debut in Europe."

The product is still waiting for European approval, but this is expected to be in place before the end of 2019. After that point, farmers in Europe, as well as America, will find themselves competing with egg products produced entirely in a factory, rather than on a farm. □

## President Trump Signs Farm Bill into Law *(continued from page 25)*

The bill authorizes $3.5 million of the total, consolidated funds to be dedicated as a "Priority Trade Fund," where USDA will have the authority to allocate money in this fund among the above programs. Mandatory funding for the program is established permanently under the final bill.

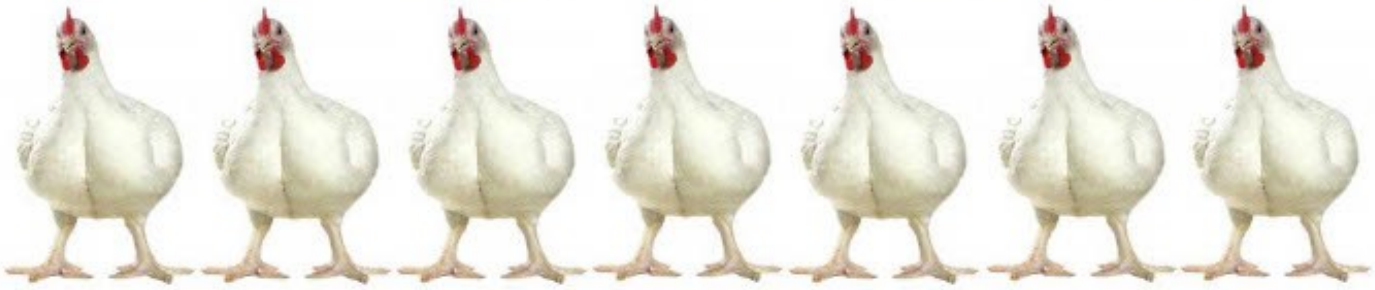
The bill would also raise the limits on USDA Farm Service Agency (FSA) guaranteed and direct operating and ownership loans from current levels. The limit on direct ownership loans would be raised to $600,000 from $300,000 and direct operating loans would be raised to $400,000 from $300,000. Both direct and guaranteed operating loans will be increased to $1.75 million from $700,000.

The final bill establishes two new animal disease response programs. The first, called the National Animal Disease Preparedness and Response Program, is a cooperative agreement program between USDA and eligible entities—which could include State departments of agriculture, universities, and other entities. The program is authorized to be funded at $20 million over 2019-22 and $18 million annually after 2022. This funding could be increased by annual appropriations bills as the committees "see necessary," the bill says.

The second program, called the National Animal Vaccine and Veterinary Countermeasures Bank, is a vaccine bank primarily focused on preventing Foot and Mouth Disease outbreaks for cattle and hogs. The program is authorized to be funded at $100 million over 2019-22, which will be shared with the existing National Animal Health Laboratory Network, and funded at $12 million annually after 2022. The vaccine bank must be housed in an existing facility, as no funds can be used to build new structures. This funding could be increased by annual appropriations bills as the committees "see necessary," the bill says.

The bill is projected to cost $867 billion over 10 years. For context, the 2014 Farm Bill was projected to cost $956 billion over 10 years. However, with only a 5 year authorization, the 2014 Farm Bill only cost $489 billion, according to USDA Economic Research Service estimates in early 2018. □

# MIDDLE TENNESSEE JUNIOR BROILER PROGRAM



**What is it?**

This is a program to expose youth (grades 4th-12th) in middle Tennessee to management, selection, and exhibition of commercial broiler chickens and further foster knowledge of poultry science and the poultry industry

**When is it?**

The program will begin on August 20, 2019 and culminate in a broiler show, auction, and skill-a-thon on October 17, 2019

**Where is it?**

All required meetings and chick pickup will happen on the MTSU campus in Murfreesboro; show and auction will happen in Shelbyville, TN

For additional information and to download an entry form, visit
www.mtsu.edu/agriculture/JuniorBroilerProgram.php

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**Questions? Contact Dr. Kevin Downs, kevin.downs@mtsu.edu**

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## Robotics class gets upgrade from Tyson teacher grants; Tyson donates $500K to Humboldt

On December 17, 2018 by Adam Friedman in the Jackson Sun

HUMBOLDT — After Tyson Foods announced their plan to build a $313 million facility in Humboldt, they talked to community leaders, and among the things they learned is some of the toughest challenges teachers face is having the right tools to engage students.

And tools require money — sometimes, a lot of money. So Tyson decided to do something; but first, they listened to the teachers.

"One of the hardest things is relating to students why they are studying in this certain class for this specific thing," Peabody High School STEM teacher Ben DiChiara said. "When are you ever going to use the cell cycle in your job? The answer is, you're probably not — but you're learning how to learn so when you get to college or industry you can learn how do something new and it won't be that hard."

STEM is an education program that stands for science, technology, engineering and mathematics. Over the past few years Tennessee schools have been implementing STEM programs to help prepare students for jobs.

According to a report revised by the Tennessee Department of Education in 2018, STEM is the fifth-fastest growing job field in the South and it estimates that by 2020, 2.6 million people will be employed in a STEM-related field.

STEM programs are still growing at schools across the state but at Peabody DiChiara is the only STEM teacher at the school, which affords him the opportunity to bring a different aspect to his teaching. That's why he created a robotics class.

DiChiara said his robotics class is different than other classes because instead of showing students step by step how to do things, he puts them into groups, gives them a task and wants them to solve it.

DiChiara said he wants students to work in groups and collaborate because when they get jobs they won't have someone walking them through how to complete every task. Often times a boss or manager gives them a job and will expect them do it.

His students are working together to design and program Lego robots to play soccer as part of their end of semester project. The students built their own stadium out of cardboard boxes and made their own rules for officiating, scoring and a pit stop for maintenance on their robots during game action.

"My classroom is a place where students can go to design, plan, make and create," DiChiara said.

But like most things in education the classroom could always use more supplies and tools to make the experience even better for students — and that's where Tyson steps in.

As part of putting roots down into the community, Tyson Foods is giving $500,000 to various schools and organizations in the Humboldt area.

"Tyson understands some of the challenges it brings to a community when you hire 1,500 people," said Garrett Dolan, Tyson's senior manager of Corporate Responsibility. "When we first got here, we started the process of engaging the community on how to solve some of the problems they face. We want to help the community — not just for our benefit but to make sure at the same time were spinning off new businesses and helping the community as a whole."

Of the money Tyson is donating, $150,000 was specifically given to DonorsChoose.org at Gibson County Schools. Individual Teachers in the district can apply for up to $1,000 in microgrants for special projects, supplies or other things they might need.

During the Dec. 11 visit to the school, Tyson officially told DiChiara his grant application for $1,000 was approved.

"The grant is perfect for this room," DiChiara said. "We have broken desks, squeaky chairs. We could use this to make the classroom feel more comfortable and professional."

DiChiara also plans to put in an engineering table along with other furniture to make his classroom more conducive for group work.

DiChiara said he hopes the money will help turn the classroom into an improved maker space for robotics so that someday students could compete in a Nashville robotics competition.

**Tyson gives $175K to schools**

Part of Tyson's $500,000 in donations to Humboldt was a $175,000 grant to Humboldt City Schools for 280 new laptop computers.

"About three years ago, we started our one to one technology plan," Humboldt City Schools Superintendent Versie Hamlett said. "It was a small plan to implement computer learning to grades one or two at a time, but what Tyson has done for us, is help us increase that rate."

"We've learned that students who are able to engage with computers learn better, but it also increases their participation in classrooms."

The computers were given to Humboldt High School, where they will be used in the classrooms to help students with classwork and homework.

Tyson's Humboldt Complex HR Manager Vanessa Presson said part of Tyson's goal is giving away computers to increase the education level in Humboldt in order to develop a future workforce. By engaging students with computers and technology, Tyson is able to increase the attainment levels, which can ultimately help the company when they are hiring in the future. *(continued on next page)*

## Robotics class gets upgrade from Tyson teacher grants; Tyson donates $500K to Humboldt

*(continued from previous page)*

**Tyson's other donations**

The other $175,000 that Tyson is donating as part of its $500,000 is broken down into four sections.

- $115,000 was donated to the University of Tennessee Center for Industrial Services to research affordable housing and childcare needs in Gibson and the surrounding counties
- $25,000 was awarded to Helping Hand Pantry in Humboldt to provide meals, groceries, clothing and other assistance to the homeless community in the Gibson County area
- $20,000 was donated to the Gibson County Sheriff's Department for a new ATV to assist with patrolling community events
- $15,000 was awarded to the Boys and Girls Club in Humboldt to renovate its teen room with new floors, TV's and gaming equipment. ◘

*Garrett Dolan, Tyson Sr Mgr for Community Investment; and Vanessa Presson, Tyson Humboldt HR Mgr*
*Photo cred: Pam Dietz, Jackson Sun*

## Nestlé: "We want to be a catalyst for poultry welfare"

Jan. 28, 2019 in PoultryWorld.Net by Kirsten Graumans

*Slower growing chicken is not just restricted to Dutch retailers. The whole industry is moving in that direction. One such company is the world's largest food concern: Nestlé.*

Food concern Nestlé can expect many deadlines in the coming years. The company wants to exclusively process cage-free eggs in Europe and the United States by 2020 and worldwide by 2025. By 2024, it wants to restrict its poultry meat production in the United States to production according to the GAP-regulations. All the meat the company uses in Europe must meet the 'European broiler ask' conditions by 2026. The last 2 measures both mean a transfer to slower growing broiler breeds. The cage-free deadline approaches most rapidly for the company, but the changes in the broiler chain will ask the most of the supply chain, expects Olivier Marchand, responsible for Nestlé's global meat purchases.

**Nestlé: Setting new standards in animal welfare**

In Europe, Nestlé is not a large player in poultry meat. It buys around 10,000 tonnes annually of poultry meat in the European Union. The company is however the world's largest food concern, with well-known brands such as Nescafé, Maggi and Wagner in its portfolio. From that perspective, it wants to set new standards for animal welfare. "Together with producers and consumers," Mr. Marchand emphasizes.

**European Broiler Ask**

With regard to European Broiler Ask, Nestlé joins Marks & Spencer and Unilever. These companies already committed themselves to a set of welfare criteria for broilers, drawn up by several European animal rights organizations.

**The biggest changes:**

- the mandatory transfer to slower growing breeds
- a maximum poultry barn occupation of 30 kgs per sq. meter [~ 6.13 lbs. / sq. ft.]
- daylight in the barns
- at least 2 meters of raised seating spaces [~6.5 ft.]

**2 pecking stones for every 1,000 birds**

A significant part of the poultry producers in European countries such as the Netherlands and Germany are now accustomed to cage-free, according to Mr. Marchand. "The changes for broilers are far bigger for the supply chain. They take time. The NGO's behind this movement give us until 2026, because they understand that especially in Eastern Europe, these changes take time."

He acknowledges that Nestlé is a relatively small poultry meat player in Europe. "We do need other partners in the industry to be able to join this movement. We see ourselves as a company that can make a difference, not only with regard to volume, but also because of our name and size. Animal welfare is important to us; we want to be a catalyst."

**Industry cooperates**

Nestlé is part of the Global Coalition for Animal Welfare, which was established this year. In addition to Nestlé, this Coalition consists of other large players in the food industry, such as competitor Unilever, home furnishing store Ikea and food service companies Aramark, Compass Group, Elior Group and Sodexo. Mr. Marchand mentions Unilever several times during the conversation, for example to give the company credit for the fact that it chose to transfer to slower growing chicken before Nestlé did. Mr. Marchand does not think this is odd. "The industry understands more and more that we need to cooperate in the field of sustainability. We choose to do that because we believe it is truly the right thing to do."

*(continued on next page)*

## Nestlé: "We want to be a catalyst for poultry welfare" *(continued from previous page)*

Moreover, it would be bad for producers if every company wanted something else, he believes. “Producers need to know what they must produce in 20 years’ time and which investments they need to make in order to achieve a certain production level. These are long -term developments.”

**“82% of Europeans want us to do more for animal welfare”**

Mr. Marchand cannot yet say whether the Nestlé products’ consumer will pay for all the changes. “We know from a European Commission study that more than half of European consumers are prepared to pay more for products from a more animal friendly housing system. It is difficult that the largest part of that group only wants to pay 5% more.”

That is why Nestlé wants to implement the changes gradually, by telling the story, says Mr Marchand. According to him, modern consumers, especially millennials (born between 1980 and 2000), are interested in animal welfare. “82% of Europeans want us to do more for animal welfare. This number increases every year. We also see more government attention. The European Parliament recently adopted a resolution that pushes to increase animal welfare in the broiler industry.”

**Speed varies per country**

Nestlé purchases its poultry meat, among other countries, in the Netherlands, but also in France and Spain. 30% of the Dutch market has already transferred to slower growing chicken. Why then the 2026 deadline? “2026 will not be the deadline everywhere,” says Mr. Marchand. “In countries that are ready before 2026, we will certainly consider it. This depends on consumer demand and whether or not producers are fully ready. When looking at animal welfare in general, countries such as the Netherlands, Germany and the United Kingdom are always frontrunners. We do not want to go too fast for countries that are not yet prepared.”

Nestlé does not want to simply change suppliers. “If a supplier cannot do what we want and is not prepared to change, we must adapt. However, it is not our intention to impose these standards unilaterally. We want to cooperate with the industry and we want to help producers.” The company specifically does that by sponsoring research, such as the current research into to use of enrichment material in the pig industry.

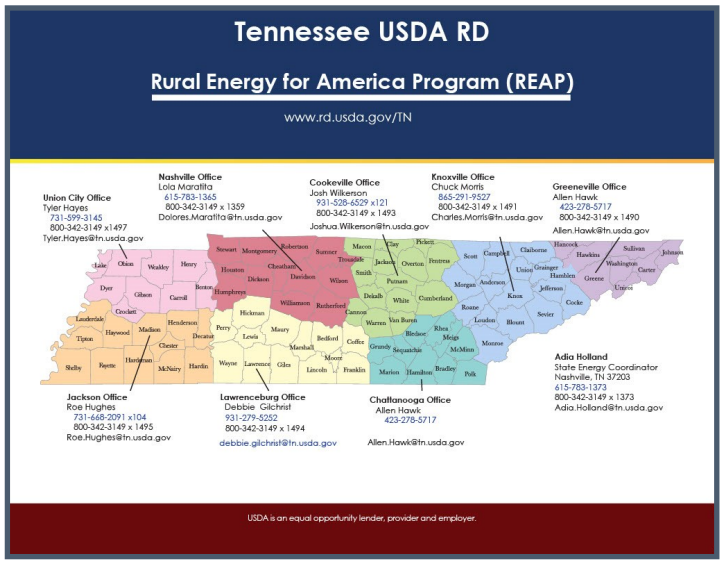
When cage-free and the transfer to slower growing chicken are successfully implemented, the poultry sector is not done yet, he expects. “After that, there are other challenges, such as killing male day-old chicks and trimming beaks. I do think that we need to handle things in the right order and step by step.”

The concern closely follows all technical possibilities, such as the German developments in the area of sexing in the hatching egg. Olivier Marchand: “New technologies ensure better welfare tomorrow.” □

## REAP Grant Applications due April 1, 2018

The Rural Energy for America Program (REAP) provides loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems and energy efficiency improvements. This program helps improve American energy independence by both increasing the private sector supply of renewable energy and decreasing the demand for energy through energy efficiency improvements. Over time, these investments can also help lower energy costs for small businesses and agricultural producers. Funding for Fiscal Year 2019 is available in a variety of forms, each under its own application process and timeline:

- Grants and/or Loans of $20,000 or less: Applications are due April 1.
- Unrestricted Grants and/or Loans: Applications are due April 1.
- Guaranteed Loan: Applications are accepted on a continuous cycle.




Funds may be used for renewable energy systems, such as biomass (biodiesel and ethanol, anaerobic digesters, and solid fuels); geothermal for electric generation or direct use; hydropower below 30 MW; hydrogen; small and large wind generation; small and large solar generation; and ocean (tidal, current, thermal) generation. **Funds may also be used for the purchase, installation, and construction of energy efficiency improvements, such as high efficiency heating, ventilation and air conditioning systems; insulation; lighting;** cooling or refrigeration units; **doors and windows; electric, solar,** or gravity pumps for sprinkler pivots; switching from a diesel to electric irrigation motor; **and replacement of energy-inefficient equipment.**

Click here to learn more and to apply for REAP financial assistance. Click here to find the REAP point of contact for your Tennessee region. □

## The Nine Most Common Pitfalls of Litter Management

*By Blake Gibson*

Many producers subscribe to the thought that litter management should be convenient and pretty litter will grow a good bird. However, perception is not reality when it comes to the floor. Poultry litter is not static. Litter's microbiological load, ammonia concentration, and manure-to-organic material ratio is continually evolving and cannot be treated the same from house to house, flock to flock, or season to season.

Regardless of the changing nature of litter, there are several common pitfalls producers continuously fall victim to that put bird health and performance at risk.

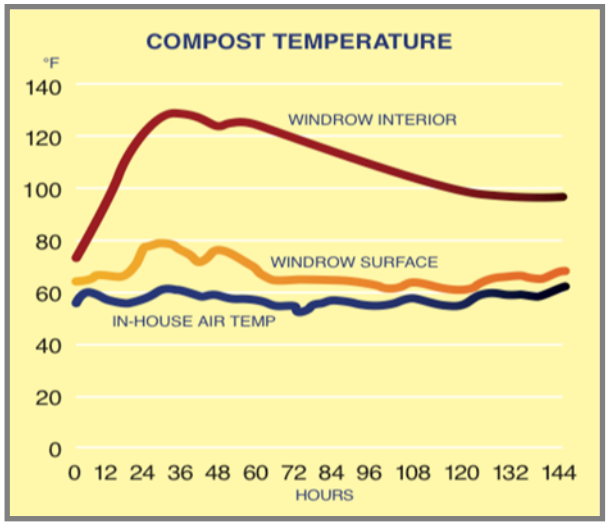
**1. Leaving houses open to air out after birds leave.** Ambient temperature impacts air quality, but core temperature affects ecology of the litter. Research has shown the importance of maintaining a core litter temperature of 88-92°F. Leaving houses open and fans on during downtime stops the ammonia purge, slows the replication of organisms within the litter, and causes valuable core floor temperature to be lost. Keep houses closed tight during downtime and minimize fan time to ensure core litter temperature is retained and fuel use is minimized.

**2. Windrowing without sufficient downtime.** Windrowing can be a great way to reduce pathogenic load in litter. However, if done improperly or if the target temperature is not met, windrowing can do more harm than good. The optimum temperature for most pathogen replication is around 86°-110°F. If temperatures rise above 130°F, pathogen growth rates decline sharply.

**3. Tilling to create pretty litter.** When litter is tilled, it may look good, but it also increases surface area which increases the amount of ammonia that is released. Instead, use a decaker immediately after catch to remove the wet litter no deeper than the thickness of the cake. Minimizing surface area, minimizes ammonia volatility.

**4. Using 5 senses to assess house conditions.** With poultry litter, our five senses are not likely to provide all the information. Tools such as ammonia guns and relative humidity meters play a vital role in accurate litter management. Take readings at chick level for the greatest accuracy. Remember, ammonia can cause problems at levels as low as 10 ppm and can cost up to 8 points of feed conversion at 50 ppm.

**5. Keeping litter too dry.** If litter is too dry, it can have just as negative an impact on bird health as litter that is too wet (air sac and bronchitis susceptibility).




*Minimum temperature recommendation is 130-135°F over the course of five to seven days, plus some added time for ammonia and moisture release.*

Litter requires the right amount of carbon, organic material and moisture (15-25% moisture content is ideal).

*Adjusting waterlines at the strings helps achieve ideal nipple height for birds.*

**6. Lack of proper pre-heating.** Pre-heating for 48+ hours prior to bird placement raises the core litter temperature, not just the surface temperature, which helps release ammonia, keeps chicks from huddling at placement, and warms water in waterlines to encourage consumption. Without proper pre-heating and the subsequent ammonia purge, up to 50% of your litter amendment can be wasted prior to bird placement.

**7. Not changing waterline management as litter changes.** Windrowed litter is light and fluffy at placement, but will become more compact over time. Level waterlines at the individual strings, not at the crank, at days 1, 3, 5 and 7 during brood and as birds move down. Donuts or light cake under waterlines is a sign that waterline management has fallen behind.

**8. Not managing litter to support cocci control programs.** To ensure sporulation (necessary for vaccine effectiveness), a minimum of 20-25% litter moisture content is required. Too much moisture, can cause excessive sporulation—challenging birds. Manage drinker lines to eliminate wet spots and keep relative humidity between 50-70% to prevent cake and house sweating.

**9. Thinking all litter amendments are the same.** Acidifiers, chemical and microbiological litter amendments all have different roles and functions, so it's vital to educate yourself on the dynamics of your chosen amendment and its purpose as some are hazardous while others are environmental friendly.

*Blake Gibson is a Senior Manager at Jones-Hamilton Co and frequent guest speaker on the topic of litter management.* □

# Tennessee Renewable Energy Assessment Program

***Working with you on the road to energy independence***

Your *free* assessment in three easy steps:

1) Call EnSave at (800) 732-1399 with any questions or to request an application

2) Sign and return the application, and provide 12 months of energy use history

3) Receive your assessment within 8 weeks of sending in your materials, and use your assessment to make business decisions and access funding

## Interested in renewable energy but unsure how to start?

## Have a project in mind but want a third party opinion?

The **Tennessee Renewable Energy Assessment Program** provides FREE renewable energy assessments to help your farm or rural business navigate the best options for renewable energy. We provide an unbiased, third-party evaluation of your renewable energy project to determine viability and ensure your project is properly sized. Not sure what type of system is best for you? We can evaluate a few options and present a comparison. Each assessment includes an economic evaluation to determine your return on investment.

Your assessment can be used to access the USDA Rural Energy for America Program (REAP), which provides grants up to 25% of your project cost and loan guarantees up to 75% of your project cost.

**This program is offered on a first-come, first-served basis and funding is limited. Call today to reserve your spot!**

Call EnSave at **(800) 732-1399** today to get started

Southeast Tennessee Resource Conservation & Development Council

Tennessee Poultry Association

*This program is funded by USDA Rural Development, and operated by the Southeast Tennessee RC&D Council and EnSave, Inc. This institution is an equal opportunity provider.*

EnSave

# TPA NEWSLETTER ADVERTISING

The TPA Newsletter is a quarterly publication that is distributed by email and is available on the TN Poultry Association website (www.tnpoultry.org). It is sent electronically to our database of approximately 1400 poultry & allied company representatives and poultry growers.

| Ad Size | Price per issue (Non-members) | Price per issue (Current members) |
|---|---|---|
| Business Card | $125 | $75 |
| 1/4 Page (4.25"x5.5") | $250 | $150 |
| 1/2 Page (8.5"x5.5") | $450 | $265 |
| Full Page (8.5"x11") | $650 | $375 |

| 2019 Newsletters | Ad Submission Deadline | Target Distribution Date |
|---|---|---|
| Spring | February 22 | March 6 |
| Summer | May 24 | June 5 |
| Fall | August 23 | September 4 |
| Winter | November 22 | December 4 |

## Submission Guidelines

- Ads should be sent as high resolution JPG files to tracy@tnpoultry.org.
- Ad position is rotated between regular advertisers.
- Single issue ad position is random.
- Discounts available for multiple ads placed in a single issue.
- Discounts available for non-members who sign an annual contract for 4 consecutive ad placements.


Tennessee Poultry Association

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## COMMODITY REPORT

March 1, 2019 by Simone Shane in Egg-Cite.com

The following quotations for the months as indicated were posted by the CME at close of trading on Friday March 1st together with values for the reference months in parentheses. The market showed a marked decline for corn and soybeans coupled with stagnation in soybean meal compared to previous weeks.

| COMMODITY | | |
|---|---|---|
| Corn (cents per bushel) | March 363 (375) | May 372 (385) |
| Soybeans (cents per bushel) | March 899 (910) | May 910 (923) |
| Soybean meal ($ per ton) | March 303 (305) | May 307 (309) |

COMMODITY CHANGE FROM PAST WEEK

Corn: March quotation down 12 cents per Bu (-3.2 percent)
Soybeans: March quotation down 11 cents per Bu (-1.2 percent)
Soybean Meal: March quotation down $1 per ton (-0.3 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 0.40 cent per dozen
The cost of broiler production would change by 0.25 cent per pound live weight

**COMMENTS**. Soybean prices recently firmed in response to reports of drought in areas of Brazil. Approximately 20 percent of the crop projected to be 117.2 million metric tons is at risk. The market has now factored in decreased production in Brazil and Argentine.

There is increasing optimism concerning the outcome of the ongoing negotiations between China and the U.S. initiated at the dinner meeting during the G-20 Summit between the delegations from the U.S. and China led by their respective Presidents. The extension of the March 31st deadline to raise tariffs from ten percent to twenty-five percent on over $200 billion in annual imports from China is now a reality. In return China has agreed to purchase an unspecified quantity of agricultural commodities in addition to energy and heavy equipment from the U.S. to offset the negative balance of payments. The USDA announced on January 7th that orders have been placed for a total of 4.5 million tons to be shipped before September 2019. China has hinted at a six-year agreement to purchase soybeans mainly due to concern over continuity of supplies due to drought in Brazil. Negotiations are apparently in progress as denoted by shuttles between Beijing and Washington but without any disclosure of specifics. Markets are now cautiously responding to conflicting reports from the Administration but prices will be influenced subsequently by area planted and crop progress.

According to the February 8th 2018 WASDE Report #585, (the first issued after the December 24th 2018 Federal Shutdown), 81.7 million acres of corn will be harvested in 2019 to produce 14.42 Billion bushels. The soybean crop is projected to attain 4.54 Billion bushels from 88.1 million acres harvested. The levels of production for the two commodities are based on preliminary pre-planting projections of yield and acreage to be planted. Ending stocks were revised based on anticipated domestic use and exports.

See the WASDE posting summarizing the February 8th USDA-WASDE Report #585 under the STATISTICS tab documenting price projections and quantities of commodities to be produced, used and exported from the 2019 harvest.

Unless shipments of corn and soybeans to China resume in volume, as projected, the financial future for row-crop farmers appears bleak despite the release of two tranches amounting to $8 billion as "short-term" compensation for all producers of commodities and livestock. Corn farmers will not be placated by the promise of a year-round E-15 blend since the logistic problems of delivery to consumers and legal challenges will delay any positive price benefit. Oversupply of ethanol with the current 10 percent addition (read BTU dilution) mandate is evident from the February 22nd spot price of $1.35 per gallon that has not changed materially in six weeks compared with a peak in late March 2018 at $1.60. Exports have been constrained by the retaliatory tariffs imposed by China on U.S. ethanol. Some refiners are reducing production and mothballing corn-fermentation plants.

The loss inflicted on farmers by the trade war with China is a gain for livestock producers who will benefit from lower feed costs. It must be recognized that the hog and poultry industries have experienced higher costs for a decade as a result of the RFS, a gift that keeps on giving. The mandate is a boon to Midwest politicians, corn growers and ethanol refiners at the expense of anyone in the U.S. who eats or uses any form of transport. ◘

Tennessee Poultry Association

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# 2019 TPA SCHOLARSHIP FUNDRAISER GOLF SCRAMBLE & SPORTING CLAYS SHOOT

All proceeds benefit TN Poultry Association scholarship program

## Sponsorship Opportunities

(includes recognition and signage for both golf and shooting)

**Diamond Plus - $2500** **Diamond - $1500** **Platinum - $1000**

**Gold - $750** **Silver - $500** **Shooting Station/Golf Hole - $200**

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## Sporting Clays Shoot

Nashville Gun Club • 1100 County Hospital Rd, Nashville TN • Wednesday, April 10, 2019

Registration begins at 9 a.m. • Sponsored lunch & awards to follow • Door prizes appreciated!!

***Please bring your own shells!!!***

**Prizes** will be awarded to the top 3 overall shooters and top female shooter

**Registration:** $125 per person

---

## Golf Scramble

Hermitage Golf Course • 3939 Old Hickory Blvd, Old Hickory TN • Thursday, April 11, 2019

Registration begins at 7 a.m. • Shotgun Start at 8 a.m. • Sponsored lunch & awards to follow • Door prizes appreciated!!

No metal spikes allowed • ***Cart release forms must be signed prior to play!!!***

**Teams**

*Option 1* - Create your own team by registering all four members

*Option 2* - Enter as an individual

Teams for individuals will be created by handicaps with A, B, C and D players assigned to each team if possible

**Prizes - two flights will be awarded**

A. Flight One - 1st place - $100 per team member; 2nd place - $50 per team member

B. Flight Two - 1st place - $75 per team member; 2nd place - $25 per team member

**Registration:** $150 per person - includes green fee/carts, mulligan, red tee

---

## Sponsorship & Registration Form

Shooters

1. **Name/email/company**_____
2. **Name/email/company**_____
3. **Name/email/company**_____
4. **Name/email/company**_____

Golfers

1. **Name/email/company**_____
2. **Name/email/company**_____
3. **Name/email/company**_____
4. **Name/email/company**_____

SPORTING CLAYS REGISTRATION FEE: **$125 per person - Number Shooting** _____ **Amount $**_____

GOLF REGISTRATION FEE: **$150 per person - Number Golfing** _____ **Amount $**_____

EVENT SPONSORSHIP: Diamond Plus Diamond Platinum Gold Silver **Amount $**_____

SHOOTING STATION/GOLF HOLE SPONSORSHIP: **$200** **Amount $**_____

GRAND TOTAL $_____

PLEASE RETURN TO: TRACY@TNPOULTRY.ORG or TPA, PO BOX 1525, SHELBYVILLE, TN 37162