TPA NEWSLETTER

"Serving the integrated broiler/breeder industry in Tennessee"

Tennessee Poultry Association

Spring 2022

H5N1 Avian Influenza Update

March 6, 2022. By now, everyone should be well aware of the presence of the H5N1 highly pathogenic avian influenza (HPAI) and the related concerns once the virus started showing up in the US in the middle of January. A broiler premises on Feb. 12th in Fulton Co., KY involving 231,398 birds and a broiler premises with 240,000 birds on March 3rd in southeastern MO have tested positive, as have commercial turkey flocks in IN and KY and commercial egg laying facilities in DE and MD. The latest states to report confirmed cases are MI, IA and SD.

The first detection of H5 this year was confirmed in SC on Jan. 14th in a wild American wigeon. Wild birds of various species have now tested positive up and down the Atlantic flyway from Nova Scotia to Florida, as well as in the Mississippi flyway. Various species of waterfowl have tested positive in Obion Co. TN, several counties in KY, Limestone Co. AL and Hart Co. GA. In Vancouver BC, Canada, a deceased eagle was found to be positive, so we know that the virus is now in all of the North American flyways. *continued on page 3*

Master commercial poultry producer program

The Tennessee Master Commercial Poultry Producer Program is a new educational program designed to improve the profitability and efficiency of commercial poultry growers. Completing the program requirements for certification as a Master Commercial Poultry Producer qualifies producers to receive 50% cost share for the Tennessee Agricultural Enhancement Program per Application C guidelines.

All of the educational materials offered as part of the MCPP are offered as pre-recorded YouTube videos. The Program format was developed specifically for growers to maintain farm biosecurity and maximize convenience. A total of 16 credits are offered in topics areas including Farmstead Management & Maintenance, Production Environment/Litter Management, Biosecurity, Litter Land Application Management, Mortality Management, and Precision Livestock Farming. Viewing videos and correctly answering review questions for 12 credits qualifies participants as Master Commercial Poultry Producers for a three-year period.

Enrollment is available through your local county Extension agent. For more information about the MCPP Program go to https://mastercommercialpoultry.tennessee.edu/. ◻

TPA Scholarship Fundraiser dates have changed to May 26

NEWS FLASH

Due to heightened biosecurity concerns from several of our complex members, we have changed the date for our scholarship fundraisers. Both the sporting clays shoot and the golf scramble will now be held on May 26, 2022. We apologize for any inconvenience this may have caused, but felt it was necessary to ensure we have a successful event.

For more information, see the event flyer on page 5. ◻

INSIDE THIS ISSUE

Knock Out Darkling Beetles, Flies, And Other Insect Pests With Dual-Action Treatment

Achieve quick and effective knockdown of darkling beetles with PYClear's powerful synergized pyrethrin-based formula. Maintain control with AzaGuard, the only azadirachtin-based IGR (Insect Growth Regulator) approved for poultry houses. Both products are derived from natural plant compounds and leave no harmful residues.

PYClear®

- 3% Pyrethrin (Chrysanthemum extract) formula + 30% synergist
- Effective on stubborn and resistant pests
- Kills on contact, visible results in minutes
- Can be sprayed, misted, or fogged

AzaGuard®

- 3% Azadirachtin (Neem extract) formula
- IGR, insect repellant, anti-feedant, and oviposition deterrent
- Targets developing insects and halts lifecycle
- OMRI-Listed

Clean Recirculating/Cool Cell Pads *Now* to Keep Birds Cool this Summer

SaniDate® 5.0 is a peroxyacetic acid-based chemistry that is EPA-registered, OMRI-Listed, works on contact and then breaks down into non-toxic compounds.

Decreased Air = Decreased Efficiency

SaniDate® 5.0 helps control:

- Algae and mold
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- Mineral buildup

Maintaining clean pads will:

- Increase air flow and wind speeds
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- Keep birds cooler

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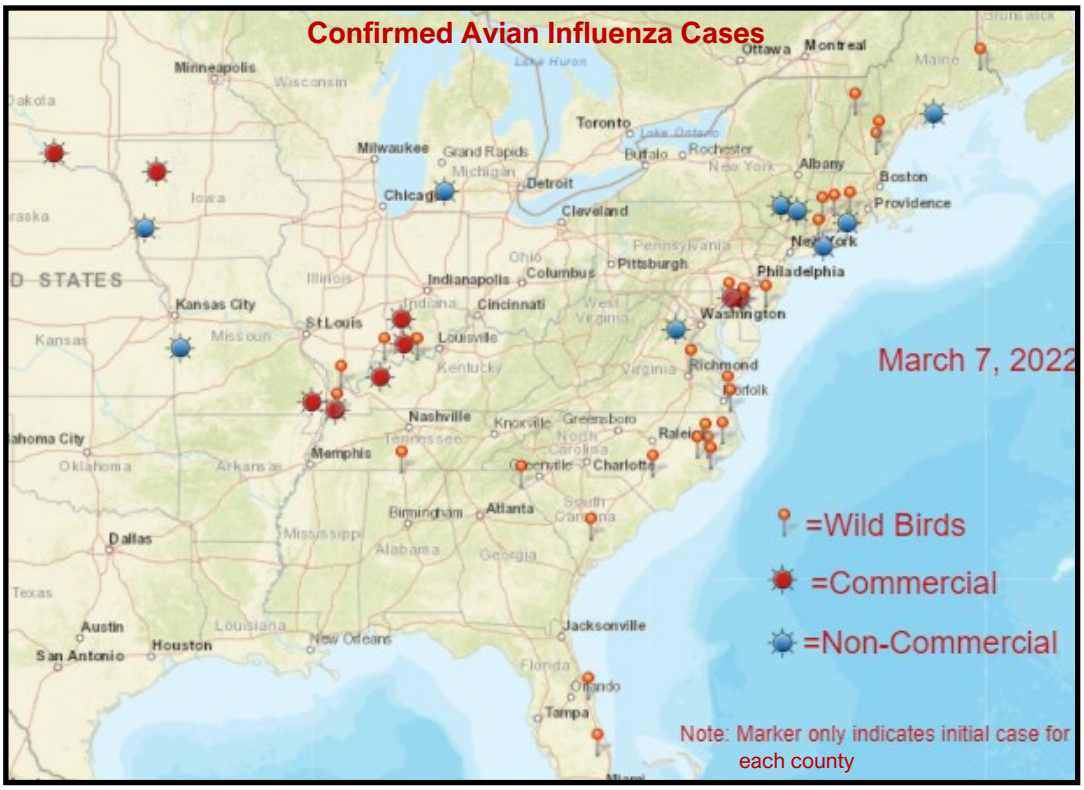
H5N1 Avian Influenza Update *(continued from front page)*

For a full report and to stay updated of all commercial, backyard and wild bird detections, click here. USDA does not report cases until non-negative samples provided by recognized state labs are confirmed positive by NVSL (the National Veterinary Services Lab in Ames, IA).



What is different about the behavior of this H5N1 virus, from what was experienced in TN in 2017 and in the upper Midwest in 2015, is that this virus is already highly pathogenic (HPAI) when it enters a flock. It does not start out in a lower pathogenic (LPAI) form and then have to mutate or change once inside a chicken house or backyard flock. Detection was never found in broilers or birds as young as 6 weeks of age in the previous breaks. Early clinical signs may include drastically reduced water and feed consumption, and a house may become noticeably quiet prior to the onset of mortality.

March 6, 2022 -
Map courtesy of Kevin Simmons, Arkansas NPIP □

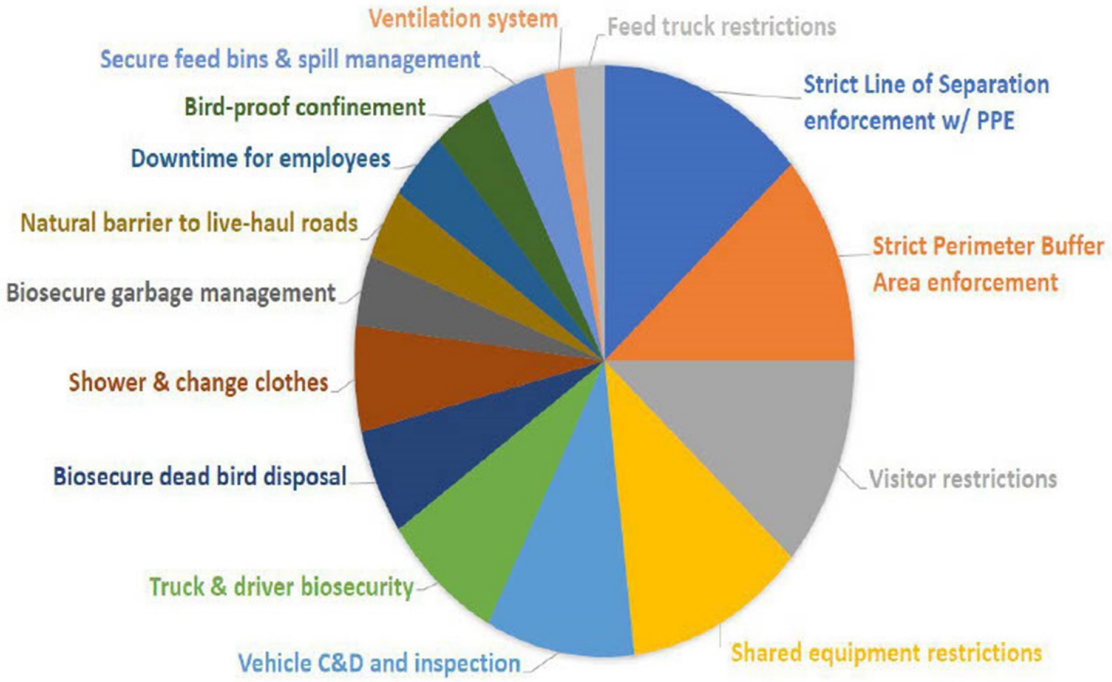
What Should A Producer Be Doing Now

Know and look for the warning signs of infectious bird disease: HPAI

SYMPTOMS

- Swollen head, Cyanotic Comb and Wattles
- Hemorrhages on Legs, footpads and feet
- Soft- or thin-shelled eggs; Misshapen eggs
- Sudden increase in bird deaths in your flock

What can producers do to enhance biosecurity?



To see the full USDA/APHIS presentation on the current HPAI situation, click here.

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SCHOLARSHIP FUNDRAISERS DATE CHANGED TO THURSDAY, MAY 26!!!!

2022 TPA SCHOLARSHIP FUNDRAISERS
GOLF SCRAMBLE & SPORTING CLAYS SHOOT

Sporting Clays Shoot
Nashville Gun Club
1100 County Hospital Rd.
Nashville, TN
Thursday, May 26, 2022

- Lunch is included
- Door prizes appreciated!!

Registration: $150 per person *(includes 5 ducks)*
PLEASE BRING YOUR OWN SHELLS!!

Golf Scramble
Hermitage Golf Course
3939 Old Hickory Blvd.
Old Hickory, TN
Thursday, May 26, 2022

- Lunch is included
- Door prizes appreciated!!

Registration: $150 per person
(includes green fee/carts, mulligan, red tee)

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

***As a sponsor of $1000 or more, a scholarship can be presented in your company's name.*

2021 Scholarship Recipients

Not pictured: Riley Black, Seth Curl, Sadie Harris, Callie Keaton, Kayla Walker and Ella Wilds

- *Since 2014, TPA has awarded nearly $150,000 in scholarships*
- *All proceeds benefit TN Poultry Association scholarship program*
- *Registration forms available at www.tnpoultry.org*

ADVERTISING INDEX

SPOTLIGHT ON COBB-VANTRESS - TENNESSEE PEDIGREE COMPLEX

Located in Deer Lodge, TN, the Cobb-Vantress Tennessee Pedigree Complex sits in a remote section of the Cumberland Plateau in western Morgan County. The complex officially opened in 2012 as Cobb's fifth U.S. research complex, representing a $22 million investment in expanding pedigree breeding.

Deer Lodge is a very small, laid-back town with a population of around 2,000 people. It was originally founded as a mountain health resort in the late 1800's. Today, it is a great place to raise a family who may love the outdoors, given the number of parks in the area.

Joshua Morris - Complex Manager

I began my poultry career before even graduating high school. I was raised on a commercial egg-laying operation in Arkansas where my parents grew for Cal-Maine. In addition to that, my grandparents raised broilers for Tyson across the state line in Oklahoma. Later, I graduated from Oklahoma State University with a BS in Agricultural Education. I taught for a few years in Oklahoma before joining the USDA as an Inspector. In 2015, I joined Cobb as a departmental manager at Grand Meadows Farm in Spavinaw, Oklahoma. In 2018, my family and I moved to Tennessee as I had accepted the role of Complex Manager over the Dry Creek Farm in Deer Lodge. I have the honored responsibility to lead dedicated live operation and hatchery teams. I have an amazing team that really understands they are feeding the world every day through the pride in their work, which we lovingly refer to as DRY CREEK PRIDE.

Lisa Anderson - Human Resource Generalist

I started my career at Cobb in 2013. In the past 8 years I have seen the complex grow in all aspects, including adding many more team members. One of the many things I enjoy here is seeing team members gain knowledge about the future of our company and helping shape that future with new team members. We are an extremely grateful complex, participating in the community with the 4th of July parade, career fairs, FFA program, and grade school sporting events that help make the children more aware of the importance of our industry. Each day has been a great learning experience, and I love that there are so many opportunities with Cobb. This is a fantastic place to work. Our team members come to work knowing the expectations and exceeding them daily. Our management is one of a kind, working side by side with the team members and sharing the same goals. I am very happy with my career at Cobb-Vantress where the opportunities are endless with the company. In addition to the great benefits, opportunities, and retirement, the heart of what makes this complex so great is knowing we are feeding the world and making a difference in everything we do.

Scott Puckett - Farm Manager

A graduate of The University of Tennessee, I started my career in retail management, where I remained for over 20 years. I came to Cobb-Vantress in September of 2018 as a Production Manager, and shortly thereafter I accepted the role of Farm Manager. I was drawn to Cobb because of our company's core values and how they aligned with mine. I feel very blessed to be able to lead such a dedicated team that understands the importance of our work. Dry Creek is an amazing place to work that embodies our company values. Dry Creek Pride!

Matthew Overton - Production Manager

I started at Armstrong Wood Products right after high school where I worked for 13 years, eventually moving up into a management role at the plant. Armstrong shut its doors around the time Dry Creek Farm was beginning construction. As I set out to search for a new career, I was drawn to the core values I had heard of at Cobb -Vantress. Upon being hired, I gained experience in many of the research departments across the farm. I was eventually promoted into a lead position in which I led a team to achieve production objectives. After this, I was the Grow-out Supervisor where I mastered raising pullets for the Laying and Pedigree departments. I am currently managing two R&D teams at Dry Creek and enjoy leading my teams to achieve all goals as well as our core values: Family, Integrity, Innovation, and Being the Best!

Lauren Hull, Production Manager

While searching for a career, I heard from people in the community that Cobb was a great place to work. I began working as a team member and really enjoyed learning about poultry. I then moved into a lead role where my focus was maximizing fertility. My next step was a role associated with health and DNA. I then began my current position managing R&D as well as a production department. I love getting to work with lots of great people who have common goals. I have found that my passion is PEOPLE & POULTRY! ◘

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Animals and food don't care how you vote!

*TPA recently interviewed **Maggie Smith**, founder and owner of **Viand Group, LLC**. Maggie is from Manchester in Coffee Co. TN and is a TPA Allied Member. A graduate of TN Tech University in Animal Science (1982) and Ag Education (1990), she also received a master's degree in Food Technology & Science under Dr. Dwight Loveday at the Univ. of TN in Knoxville (1988). In 2018, Maggie was awarded as the BRCGS (Brand Reputation through Compliance Global Standards) Auditor of the Year for America, and in 2020 she received the TTU Alumni Association's Outstanding Service Award.*

Maggie, as the founder and owner of Viand Group, LLC, tell us briefly what you do.
Viand Group, LLC offers consulting, training, and auditing services in the food safety and animal welfare sectors. We have subject matter experts available that have experience in a variety of foods as well as animal welfare, health, and nutrition. In addition, I serve on the NAMI (North America Meat Institute) and Sysco animal welfare committees and have served in different capacities on committees for global restaurants, groceries, and protein companies.

This obviously involves numerous certifications and credentials to maintain on your part…
That's right. I am a PAACO (Professional Animal Auditor Certification Organization) Foundation Auditor an American Society of Quality (ASQ) Certified Quality Auditor, an ASQ Certified Food Safety and Quality Assurance Auditor, a BRCGS Approved Training Partner, a BRCGS Third Party Auditor, am certified as a process Authority (for canning) and am a Preventative Controls Qualified Individual (PCQI) for human and animal feed per FDA's Food Safety Modernization Act (FSMA).

What is unique about the poultry animal welfare auditing work that you do?
During a poultry animal welfare audit, depending on the scope, I visit the hatchery and feed mill, observe a catch crew, visit farms, and visit the processing plant. The audit encompasses each of those areas as well as relevant programs, records, observations, and interviews.

You have worked very closely with former Undersecretary for Food Safety with USDA, Dr. Mindy Brashears, which is both incredible and fascinating. Anything you'd like to share regarding that friendship and professional working relationship?
Mindy and I first met via Facebook Messenger then emails and phone calls. I reached out to her with some regulatory inspection questions and clarifications. She was very gracious and always connected me with the right people. The remarkable thing about technology, especially during a pandemic, is the ability we have to forge a relationship with people, both on a professional and personal level.

Will you continue to stay involved at the national level, under the new administration?
Animal welfare and food safety are non-compete categories in my book. If I can be of assistance to any administration, at any level, I'm willing to do so. My focus is not on what party is in office. Animals and food don't care how you vote.

In 2019 you hosted Dr. Temple Grandin in Cookeville to speak to a large audience of FFA youth, college students, and industry folks. How did you first meet Temple and how have you worked with her?
I met Temple about 20 years ago at NAMI's Animal Care and Handling Conference. The first opportunity to collaborate with her was on Sysco's animal welfare committee. For several years, she and I have served on the NAMI animal welfare committee, and we've been speakers for their annual conference several times. I was even honored to have been invited to her 70th birthday party a few years ago and flew to Colorado for the sole purpose of attending.

How has Temple influenced and helped to shape you?
I have learned so much about animal behavior from her. I can't look at a handling facility without thinking how hard the operator may be working when they don't have to. Temple's determination to succeed has been met with so many obstacles. This is a person who didn't speak until she was three and who fought to be taken seriously, yet she never stopped pursuing what was important to her. She is a reminder not to let obstacles get in your way. A visit to her aunt's ranch changed her entire life's trajectory. One never knows what may change their life at any time.

You get asked to speak at various conferences and trainings around the country. Which opportunity has meant the most to you and why?
That's a tough question. The NAMI animal care and handling conference is where I first spoke to a large group about animal welfare. It was when animal welfare audits were in their infancy and companies didn't know what to expect. I spoke about the requirements for having a good audit experience from three points of view (auditor, auditee, and audit). That talk has been a foundation for a lot of other topics in that I tend to include different points of view. I always enjoy speaking to students, especially when they interact with me.

Maggie, you really enjoy mentoring young professionals in pursuing poultry processing, QA, and food science careers. What advice do you have for graduates just starting out in their careers?
First off, be willing to relocate. I understand some can't move for several reasons, and I respect that. But if your reason is you don't want to move away from home, don't waste the company's time interviewing. You can always go home at some point later in your career, but by then, you might not want to. Secondly, be a crock pot, not a microwave. The corner office may be waiting on you…but not today. Young professionals, due to technology, are accustomed to having everything at their fingertips and having it right now, an "instant gratification takes too long" mentality if you will. *continued on page 38*

TSU welcomes a new poultry specialist to their faculty

Please help us welcome Dr. Pramir Maharjan, Assistant Professor for Poultry Science in the Department of Agricultural and Environmental Sciences for the College of Agriculture at TN State University. Pramir obtained his undergraduate degree in Veterinary Science from Nepal in 2010. He then completed his MS and PhD degrees in Poultry Science from the University of Arkansas in 2016 and continued with his research efforts there as a post-doc. While working under noted poultry scientists such as Dr. Craig Coon, Dr. Casey Owens and Dr. Susan Watkins in Arkansas, his research efforts have included advanced focus on the woody breast myopathy, as well as water quality and biofilm concerns.

Before starting in his current position at TSU in Jan. of 2022, Pramir was working as a research scholar at North Carolina State University. His research and Extension roles at TSU will cover broader areas of poultry production with a focus on poultry drinking water quality management and feed nutrient management aimed at improving flock health, performance and yield characteristics. His specific research interests include amino acid and energy nutrition for optimal growth and performance, dietary effect on physiological nutrient turnover in tissue, understanding physiological aspects of emerging muscle myopathies, feed additive evaluation in relation to feed nutrient digestibility and bird health, dietary non-starch polysaccharide digestion and gut health impacts, evaluation of water sanitation options, biofilm mitigation strategies in poultry watering systems, and disease management practices for optimal flock health.

Pramir is looking forward to getting his research program at TSU started and has been busy writing and applying for research grants. He recently coordinated and hosted a webinar for backyard flock owners on poultry disease management and biosecurity, with a focus on the ongoing HPAI concerns. As an expert on addressing water quality concerns he kindly prepared the white paper for us that is found on pages 37—38 in this newsletter on how to "Ramp up poultry drinking water sanitation measures in the wake of the Avian Influenza virus outbreak". Pramir is also ready to get started with efforts to help growers address water quality and biofilm issues where needed.

Please help us welcome Pramir to Tennessee and to TSU. As you can tell by his smile he is very pleasant to work with and will be more than happy to assist you however possible. Pramir can be reached at pmaharja@tnstate.edu or 479-595-3851. ◘

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NEWS FROM AROUND THE COMPLEXES

Pilgrim's, a leading global food company and the largest employer in Graves County, Ky., announced a $1 million investment to assist with community recovery needs and support long-term rebuilding efforts resulting from the recent tornado that impacted the area. *Click here for full article*

JBS USA announced it has reached a milestone of $100 million being committed to the company's Hometown Strong initiative, one of the largest rural community investment programs of its kind. Since the program was launched in May 2020, JBS USA has worked with community leaders and local officials to identify meaningful investments to strengthen local communities where the company operates. *Click here for full article*

Dr. Rachel Thiemann is completing her masters at Mississippi State University and will begin working for **Koch Foods** in June. She received her DVM from NC State University, and her new job responsibilities will include working with the TN complexes.

Tyson Foods donated 600,000 meals (150,000 pounds of protein) and deployed other disaster relief efforts to help support parts of Kentucky, Tennessee and other states devastated by the recent tornadoes. The company partnered with Walmart to help feed families and relief workers in Mayfield, Kentucky, which is home to Tyson team members who work at its poultry complex in nearby Union City, Tennessee. Plans were also made to provide food and other assistance in Bowling Green, Kentucky, as well as other nearby communities. Food was also provided in Samburg and Dresden, Tennessee. *Click here for full article*

WOGs donated by **Tyson Foods** were received at the Nashville Rescue Mission. The whole chickens (without giblets) were kindly donated by Tyson Foods in **Albany, KY** - made possible by the complex mgr. **Tim Esslinger**, plant mgr **Tony Delk**, and VP **Eddie Chancellor**. The delivery was made possible by **JB Hunt Ag Services** courtesy of **John Putnam, Jeannell Goines, Rodney Nye**, their driver **Cornelius**, and **Kroger** provided the reefer trailer. This protein was coordinated by TPA's Executive Director **Dale Barnett** and TPF's President **Marvin Childers** in support of the Tracy Lawrence Mission Impossible Turkey Fry annual events.

Billy Eldridge, operations mgr., **Bonnie Broberg** - Dir. of major gifts, and **Cheryl Chunn**- VP of Development were on hand at the Mission to receive the protein. The Nashville Rescue Mission provides 1200-1400 meals a day and provides shelter and social support to the local downtown community.

Tyson Foods supported its U.S. team members and plant communities in 2021 through numerous hunger and disaster relief efforts, community grants and on-site educational programs. The company donated more than 16 million pounds of protein – the equivalent of 64 million meals – to fight hunger in fiscal 2021. The food donations, valued at $36 million, were given to food banks, pantries and hunger relief organizations in plant communities and across the nation. *Click here for full article*

Tyson Foods Humboldt plans to build an on-site childcare and learning facility at its new Humboldt, Tennessee, poultry processing plant to provide free childcare to the children of second shift workers. The $3.5 million Humboldt facility, expected to be operational in 2023, will support up to 100 children, five years of age and younger, and employ a staff of 18. Called Tyson Tykes, it will be operated as an early childhood learning center by KinderCare and subsidized by the company to lower the cost for Tyson team members.

Tyson Humboldt's new Plant Manager is **Nathan McDowell.** Nathan was previously the Plant Manager for Pilgrim's in Lufkin, TX. Nathan is a US Army veteran and graduated from the Univ. of Ark in 2016 with a B.A. degree in Agriculture: Marketing & Management. **Alan Pace** began his new role as the Live Production Manager for Humboldt in January of this year after previously working in Tyler, TX.

Cobb-Vantress, a wholly owned subsidiary of **Tyson Foods**, announced the appointment of **Joyce J. Lee**, a leader in the animal health industry, as its new president. Lee joins Cobb after serving as executive vice president and president of the $1.5 billion U.S. Pet Health and Commercial Operations portfolio for **Elanco**. Lee will report to David Bray, Tyson Foods' group president of Poultry.

Aviagen® teams in Asia Pacific, Latin America and North America have combined their talents to create a new hybrid platform for heightened customer service and internal flock management. The new solution is made possible by a combined package of the latest in bonded cellular networking, mesh Wi-Fi, Augmented Reality (AR) headsets, specialist software and other technology. Thus, through live-streaming capabilities, for example, customers will be able to bring Aviagen experts virtually to the farm, hatchery or any area of their facility where they need help on a pressing issue. *Click here for full article*

Recent visit **to Aviagen Crossville** L:R. Adam Wicker, Aviagen's Lab mgr. in Crossville, TPA Ex. Dir. Dale Barnett, Dr. Sierra Slautterback, Kevin Jolley - Pedigree Live Prod. Mgr. and Dr. Michael Rusanu; Dr. Tom Tabler - UT's new Extension/Research poultry specialist and Dr. Pramir Maharjan - TSU's new poultry specialist.

ALLIED MEMBER NEWS

Cumberland, the poultry equipment brand of AGCO, has won an AE50 award for its new Flex-Flo XD ULTRA Unloader feed system. The award was bestowed by the American Society of Agricultural and Biological Engineers, an educational and scientific organization dedicated to the advancement of engineering applicable to agricultural, food and biological systems.

Arm & Hammer Animal and Food Production is pleased to announce **Dr. Xandra Smith** will be stepping into the role of director of innovation and product development. The news of Smith's promotion comes as **Dr. Tom Rehberger**, former director of innovation and product development, retired from the organization at the beginning of December.

Lubing Systems, L.P. recently hosted members of UTIA's precision poultry research team in Cleveland for a tour of their manufacturing facilities. L-R: TPA's Exec. Dir. Dale Barnett; Lubing's President Chris Hawk; UTIA's Dean for AgResearch Dr. Hongwei Xin, Poultry Extension/Research Specialists Dr. Tom Tabler and Dr. Shawn Hawkins, Lubing's Nat. Sales Dir. Bill Snow and Tech. Dir. Brent Sentell. Not pictured – Dustin Hicks, Mechanical Designer for Lubing

Craig Coufal, Ph.D. has joined **Jones-Hamilton Co.** as Research and Technical Services Manager in the Agricultural Division. Coufal, who previously served as an Associate Professor and Extension Specialist in the Department of Poultry Science at Texas A&M University, is well known for his applied research programs on poultry litter and waste management, and egg sanitation. Prior to joining the Department of Poultry Science at Texas A&M in 2008, Coufal was an Extension Specialist with the Mississippi State University Poultry Science Department. He has been a part of multiple Ph.D. committees related to poultry nutrition and has advised numerous graduate students. Coufal received his B.S., M.S. and Ph.D. in Poultry Science from Texas A&M University. He also previously worked in the egg industry as a production supervisor with Cal-Maine Foods, Inc.

WATCH: Boosting Women's Careers in Food and Ag

March 2, 2022 at FoodMarket.com

Women in Food and Agriculture presents this latest webinar on Boosting Women's Careers in Food and Agriculture, featuring insights from a dynamic panel. View the latest videos, podcasts, and articles from WFA and learn how to get involved and be a force for change at http://www.wfasummit.com.

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AGCO
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UTIA invests in poultry research, Extension and facilities

Feb. 21, 2022 by Dr. Hongwei Xin, Dean for AgReseach and Dr. Neal Schrick, Head of the Animal Science Dept.

The thriving poultry industry in Tennessee is very important to the economic prosperity of our state, with an annual economic impact of over $9 billion. It is natural for us to make it a priority area and invest resources accordingly. Over the past two years, we have been taking actions to strengthen our poultry programs and abilities to serve our constituents. Specifically, we have invested in new faculty positions in the departments of Animal Science (ANSC) and Biosystems Engineering and Soil Sciences (BESS), attracting top-notch scientists nationally and globally. A prime example is the recent hiring of Dr. Tom Tabler as UTIA's Extension/ Research poultry specialist in ANSC that will be located at the Middle Tennessee Research and Education Center in Spring Hill. Hiring such a distinguished and experienced faculty member to provide educational information to our growers, industry and county agents indicates the value that current administration places on the importance of the poultry industry as a driver of the economy in the state. This past year, our Precision Livestock Farming (PLF) initiative was launched. Led by Dr. Robert Burns, distinguished professor of BESS, an interdisciplinary team of faculty, staff and graduate students have been formed https://plf.tennessee.edu/. Our investments have already yielded dividends. For instance, UT was one of the two U.S. awardees (~$400K) of the SMART Broiler initiative funded by the Foundation for Food and Agriculture Research (FFAR, Hao Gan – PI, BESS). UT team has recently been awarded a $1 million USDA-NIFA grant in the Inter-Disciplinary Engagement in Animal Systems (IDEAS) Program that aims to improve well-being of broilers through real-time monitoring and assessment of bird behaviors (Yang Zhao – PI, ANSC). Along with Drs. Zhao and Gan, UTIA has several faculty working in the area of health and well-being, facilities and sustainability (design, energy usage) and environmental issues that cross department lines and form collaborative teams to address issues facing the industry at all levels.

To further enhance our abilities to conduct mission-oriented research and education programs and serve the broiler industry, planning is underway to construct a state-of-the-art, commercial-scale broiler research and education facility at the Middle Tennessee AgResearch and Education Center in Spring Hill. A steering committee consisting of faculty, staff, and industry stakeholders has been formed and will advise on the project. Establishment of this new facility is being made possible by a state grant to modernize infrastructures and equipment at the 10 UT AgResearch and Education Centers across the state. With excitement and gratitude, we are expecting partnerships and support from various production and allied industries on this endeavor.

We would be remiss if we don't mention the investments we have made and will continue to make into the area of precision cattle production. Equipment grants have been issued to faculty, and data collection is in progress that quantifies feed and water use and behaviors of individual beef cattle kept in groups at the Middle Tennessee AgResearch and Education Center. Work is also in progress to install a state-of-the-art milking robot system at the East Tennessee AgResearch and Education Center – Little River dairy facility.

With the firm commitment to investing in people talents and state-of-the-art infrastructures, our vision is to make UT the PLF leader in the region, the United States, and the world in the foreseeable future. We are increasingly excited about the future and looking forward to growing our public-private partnerships! □

UT announces new Statewide Poultry Extension/Research Specialist

Jan 24, 2022 from UTIA

UT Animal Science is excited to announce the hire of Dr. Tom Tabler as our new statewide Poultry Extension/Research Specialist. Tom has a 70% ANR Extension appointment and 30% AgResearch appointment and is located at the MTREC (Middle TN Research & Education Center) facility where the new NextGen Poultry Houses will soon be built. Dr. Tabler is well known in Poultry Extension and is one of the best in the country.

Tom Tabler Bio

Tom received his BS, MS, and Ph.D. degrees from the University of Arkansas at Fayetteville. He has over 40 years' experience as a broiler service technician, commercial broiler grower, university researcher and extension poultry specialist.

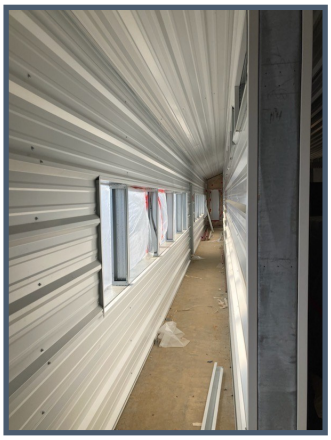
His research areas include composting poultry mortality; environmental management; poultry water quality; poultry housing, ventilation, and cooling; energy efficient lighting; litter management; and antibiotic alternatives. He works with industry personnel and contract growers to assist both with achieving optimum performance and production goals. He conducts applied research that allows the poultry industry to make informed equipment and management decisions. He assists county agents in providing relevant programming to backyard poultry keepers.

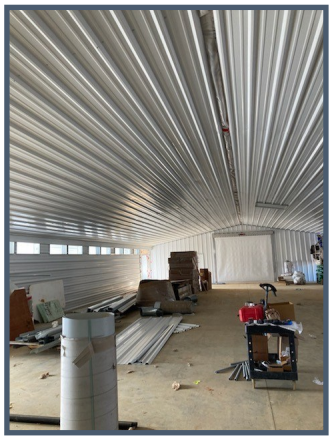
TN Extension focus

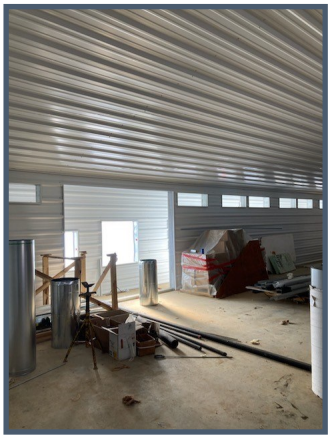
Much of his Extension work over the years has been addressing problems, always keeping in mind biosecurity. Such as why composters aren't working properly, or why some growers always seem to have wet litter, or does this grower have water quality issues with their wells? He expects to continue these troubleshooting efforts in TN. He plans to work closely with TN integrators and the primary breeders in the state to assist them in any way possible. He looks forward to working with agricultural groups such as Farm Bureau, NRCS, the agriculture commissioner and state veterinarian offices, and the TN Poultry Association to help address issues important to the commercial industry and its family of growers. County agents and backyard flock producers are another critical focus as UTIA continues to develop the Backyard Flock Master Producer Program.

Tom is located at the Middle Tennessee AgResearch and Education Center at 1000 Main Entrance Drive in Spring Hill. Contact Tom at (931) 486-2129 or gtabler@utk.edu. □

TN Tech research facility progress







Aviagen feed mill updates

*Pics provided by Isaiah Knowles of **Tennessee Valley Aerials.***

DATES TO REMEMBER

TPA SCHOLARSHIP APPLICATION DEADLINE
March 15, 2022

REAP GRANTS (FOR RETROFITS)
March 31, 2022 deadline
Click here for more info

TPA SERVICE TECH WORKSHOP
Postponed until
further notice

AG DAY ON THE HILL
May 22, 2022
Cordell Hull Building
Nashville, TN
@AgDayontheHill

SCHOLARSHIP FUNDRAISERS

Sporting Clays
May 26, 2022
Nashville Gun Club
Nashville, TN

Golf
May 26, 2022
Hermitage Golf Course
Nashville, TN

POULTRY PROCESSOR WORKSHOP
May 18-19, 202
DoubleTree Downtown
Nashville, TN

SHOOTING HUNGER
June 24, 2022
Huntingdon, TN
https://shootinghunger.com/index.php/locations/west-tn

TPA ANNUAL MEETING & SUMMER GETAWAY
August 19-20, 2022
Gaylord Opryland
Nashville, TN

UTIA welcomes Dr. Yang Zhao to their poultry research team

Dr. Yang Zhao received his PhD degree from Wageningen University in the Netherlands. He joined the faculty of Animal Science Department at The University of Tennessee in August 2020. Zhao has 17 years of experience in poultry system and environment research, specialized in 1) development of precision livestock farming systems for poultry production, 2) environment management in poultry housing, and 3) airborne transmission of pathogens.

Zhao participated in the Coalition for Sustainable Egg Supply (CSES) project that systematically compared three hen housing systems (conventional cage, enriched colony, and cage-free houses) in terms of their environment, economic, and societal impacts. He and his colleagues spearhead the efforts to monitor thermal environments and quantify concentration and emission of gaseous and bioaerosol pollutants from these housing systems. In a follow-up project funded by USDA-NIFA, he developed a pilot spraying system to suppress dust aerosolization from poultry litter.

During the 2014-15 highly pathogenic avian influenza outbreak in the U.S., Zhao investigated the airborne transmission of HPAI via field sampling and meteorological modeling. He also developed a model to estimate the supplemental heat requirement to implement ventilation shutdown as an alternative depopulation method during poultry disease outbreaks.

Zhao's recent research is focused on developing and applying precision livestock farming technologies to monitor broiler behavior, welfare, and production. Within this research scope, he has been developing computer vision systems to quantify the broiler activity and estimate bird gait score, investigating the interaction of broilers with ground and air robots, and objectively evaluating bird welfare as affected by growth rate and antibiotic withdrawal.

The research outcomes of Zhao have been published in over 130 technical publications. A full profile of Zhao's publications can be found in Google Scholar and ResearchGate.

Zhao has been awarded contracts and grants totaling $4 million. He has supervised and co-supervised 20 undergraduate and graduate students. Some of Zhao's academic recognitions include Sunkist Young Designer of American Society of Agricultural and Biological Engineers (ASABE), Gamma Sigma Delta Research Award, ASABE AOC Early Career Award, Article of Editor's Choice in Poultry Science, ASABE Outstanding Reviewer, and ASABE Superior Paper Award.

See pics of Dr. Zhao and his team on page 19 and his latest grant announcement on page 21.

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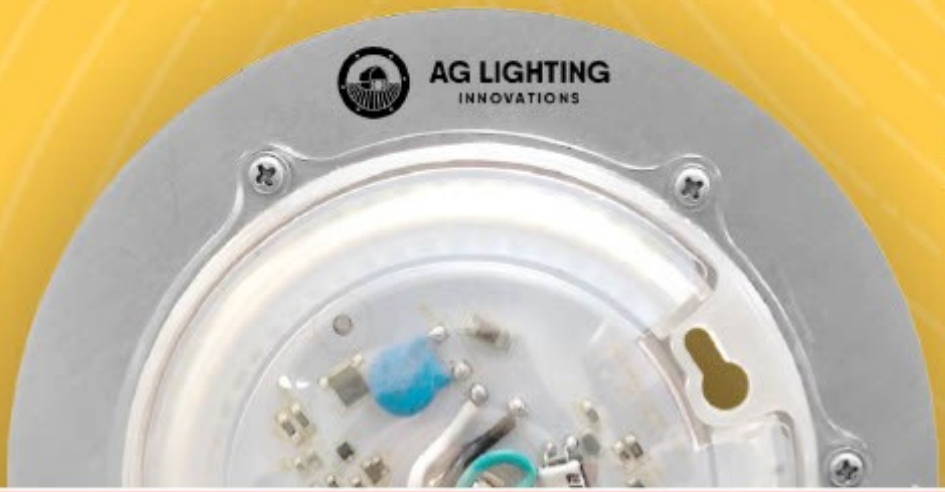

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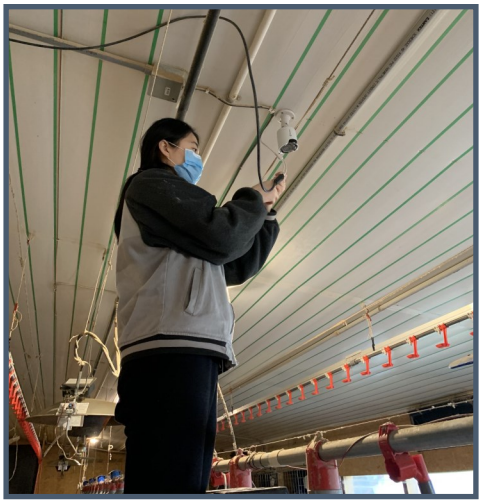
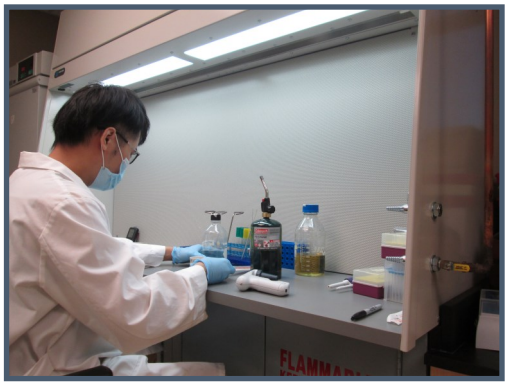
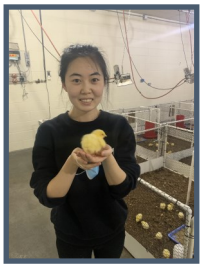
UTIA welcomes Dr. Yang Zhao to their poultry research team *(continued from page 17)*



Avian Disease

Preventing HPAI spread means taking biosecurity seriously

March 8, 2022 at WattAgNet.com by Meredith Johnson

Dr. Carol Cardona, Pomeroy Chair in Avian Health, University of Minnesota, shared insights and recommendations concerning the recent HPAI findings with Egg Industry Insight. *Click here for full article* ◘

Intestinal health the key to necrotic enteritis prevention

November 18, 2021 at WattAgNet.com by Elizabeth Doughman

Necrotic enteritis typically develops as a complication of other diseases, like coccidiosis, that impact intestinal function or cause immunosuppression. Coccidia vaccines can help prevent both diseases in chickens and turkeys. *Click here for full article* ◘

Early IBV infection causes more severe false layer syndrome

December 22, 2021 at PoultryHealthToday.com

Exposure to infectious bronchitis virus (IBV) has been linked with cases of the poultry reproductive disease false layer syndrome, where large cysts in the oviduct prevent birds from laying eggs. New research suggests that the earlier birds are challenged with the virus, the more severe the symptoms can be. *Click here for full article* ◘

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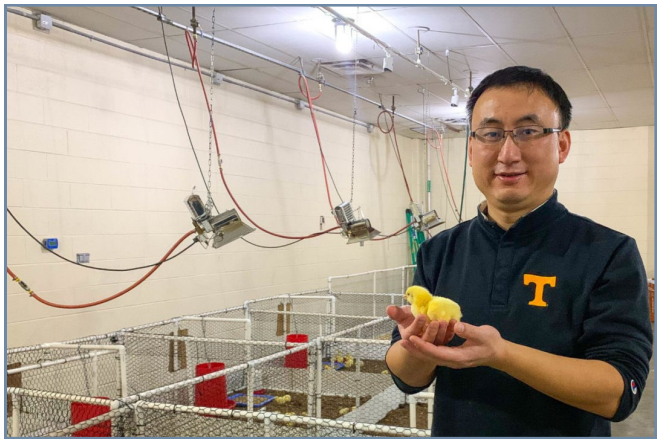
PREVENTION WORKS
Shaping the future of poultry health

Boehringer Ingelheim

University of Tennessee researches animal welfare in poultry production

February 9. 2022 at MeatPoultry.com by Ryan McCarthy



Yang Zhao, assistant professor in the UTIA Department of Animal Science, researches welfare of broilers in production.

Source: The University of Tennessee Institute of Agriculture

KNOXVILLE, TENN. – The University of Tennessee Institute of Agriculture recently announced that a research team was awarded $1 million to create and implement a computer vision system to monitor poultry production.

The grant for this research was funded by the Agriculture and Food Research Initiative, a competitive grants program of the USDA National Institute of Food and Agriculture.

Precision livestock farming (PLF) systems have been used on larger animals to monitor activity, agitation, and other animal stress and welfare indications. However, the Tennessee researchers said that monitoring poultry has proven to be more difficult with smaller animals and higher populations in systems.

This project from Tennessee involves creating a computer vision system to track animal-based measures (ABMs) for poultry in real time.

Using lightweight deep learning and algorithms to identify individual birds, the program will track welfare-related comfort behaviors like stretching, preening and dustbathing as well as production-related behaviors like eating and drinking. The researchers will then develop a benchmark database with detailed notes on the birds' behaviors.

The artificial intelligence and video image analysis will allow researchers to examine the poultry's animal-based measures with management factors and collect baseline data. Researchers estimated that it cost would be $2,500 per house.

"Despite strong interest in PLF for poultry farming across the world, few systems have been developed for the commercial production environments," said Yang Zhao, assistant professor in the UTIA Department of Animal Science. "This project provides us timely supports to develop an affordable PLF system that may assist broiler growers to automatically collect bird behavioral responses and better manage the flocks at commercial farms."

Full funding for the project was announced on Feb. 2, and Zhao and his team expect to demonstrate the system in 2025. ◻

Animal Welfare

California Bill Would Ban New CAFOs

February 18, 2022 at California Legislative Information

California Assembly Bill 2764 would impose a ban on new and expanded Concentrated Animal Feeding Operations (CAFOs) and impose a $10,000 per day penalty for violations. *Click here for more* ◻

Activists Play Grinch, Seek End To 'Animal Gifting'

December 21, 2022 at Drovers.com by Greg Henderson

Animal activist groups went full Grinch-mode this week, calling for the end of "animal gifting" programs such as Heifer International and 'Hatching Hope' that work to support impoverished people. Because, well, Humbug! *Click here for full article* ◻

Massachusetts law changes to avert egg shortage in 2022

December 20, 2022 at WattAgNet.com by Meredith Johnson

Without these amendments, cage-free facilities that only allow 1 square foot of space would not have been able to supply to Massachusetts, meaning that egg shortages were expected. *Click here for full article* ◻

Live Production

VIDEO: Can broiler feeding programs reduce woody breast?

January 7, 2022 at FeedStrategy.com by Jackie Roembke

Find out about University of Arkansas's Dr. Casey Owens's broiler muscle myopathy research and what she suggests to combat it. *Click here for full article* ◘

Digitalization can optimize poultry productivity planning

December 10, 2021 at WattAgNet.com by Elizabeth Doughman

Traditional approaches to poultry production are no longer sufficient to meet growing demand and address societal concerns about animal welfare and sustainability. Digitalization is now viewed as the next big thing for poultry production. *Click here for full article* ◘

Will CRISPR Transform the Poultry Industry?

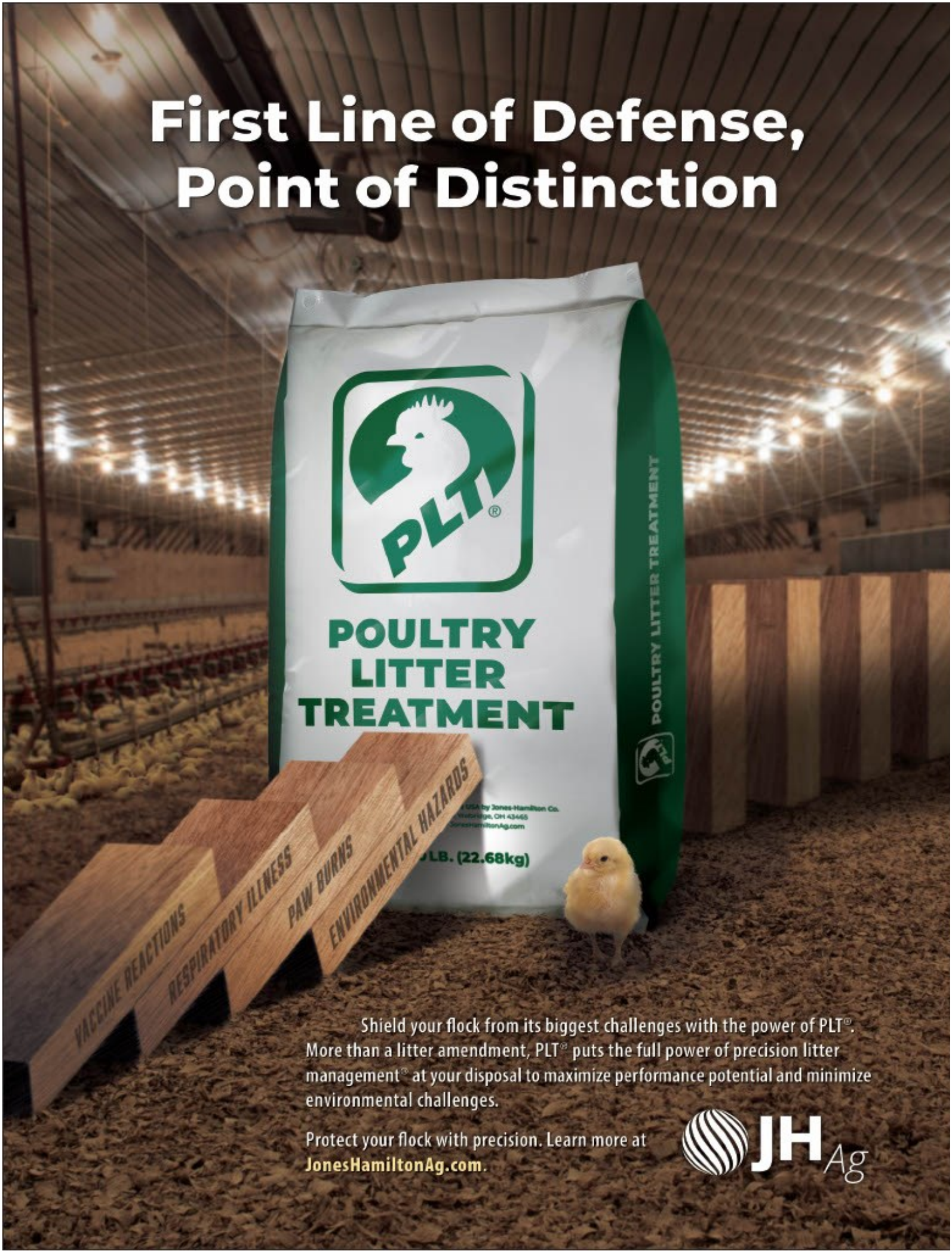
December 2, 2021 at WattAgNet.com by Elizabeth Doughman

Gene editing techniques like CRISPR could revolutionize the poultry industry in the future, improving yield, resistance to disease and leading to better welfare. “Gene editing itself has become a topic of much research and great interest in the academic and in the commercial work,” Mark Fife, Ph.D., head of biotechnology, Aviagen, said during the Poultry Tech Webinar Series. *Click here for full article* ◘

Gene edited mice could be key to ending male chick culls (blog)

December 17, 2021 at WattAgNet.com by Elizabeth Doughman

Elizabeth Doughman: Scientists at the Francis Crick Institute and the University of Kent used the gene editing technology CRISPR/Cas9 to create female-only and male-only mice litters. The findings could provide a genetic solution for the male chick layer dilemma. *Click here for full article* ◘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Introduction to modern broiler production

December 2021 at The Feed by Boehringer Ingelheim

Boehringer-Ingelheim and the University of Georgia have created a new series of short videos to increase education on best chicken house practices and provide flexible tools for current and future educational use. *Click here for full article and to view the videos* □

Managing eggs and chicks from young breeders

December 8, 2021 at PasReform.com by Lotte Hebbink

First week mortality is often higher in chicks from very young breeders (25–30 weeks) than in chicks from older breeders. What causes these chicks to be more vulnerable?

Nutrient availability and fat metabolism

During incubation, the developing embryo utilizes nutrients from the yolk sac, the nutrient composition of which depends on several factors, including the age of the hen.

Younger hens generally lay smaller eggs than older hens, with less yolk in relation to albumen. Furthermore, studies show that the fresh yolk of young breeders has different fatty acid profiles, contains less fat and protein, and contains more water than that of older hens.

During the main part of incubation, the chicken embryo relies for more than 90% on the oxidation of yolk fatty acids to meet its energy demand. Studies show that embryos and chicks from young breeders are less able to mobilize lipids and transfer lipoprotein for energy and have relatively lower yolk absorption. Other studies show that, on embryonic day 20, the villus height, crypt depth, and microvillus height are shorter in the jejunum of embryos from young flocks. Shorter gut villi provide less contact surface to absorb nutrients from the yolk or feed, which could influence the chick's growth and development, especially during the first few days of life.

Adjustments in incubation and farm management

Eggs from young breeders spend less time in the oviduct than those from older hens. Consequently, these embryos are in an earlier developmental stage when the egg is laid, which means that they need a couple of hours longer incubation time. As eggs from young breeders are generally smaller, the egg mass and heat production inside the incubator is also lower. Adjustments to the temperature setpoints might therefore be necessary to maintain the average eggshell temperature of 100°F inside the machine and prevent eggs from becoming too cold during the last part of incubation.

Day-old chicks from young breeders may benefit from extra nutritional support directly after hatching, to reduce first week mortality. In a field study by Royal Pas Reform that included 1.8 million chicks, it was found that providing feed in the SmartStart™ hatcher considerably reduced first week mortality in chicks from flocks aged 25 to 30 weeks.

Farm management also needs to be adapted to chicks from young breeders. For example, the drinking lines should be lowered to prevent chicks having to reach too high for the drinking nipples. Also, as small chicks have relatively more body surface compared to their body mass and therefore lose heat more quickly, a higher brooding temperature is needed to maintain a rectal temperature of 104–105° F. Chicks from young breeders need one to two more days to make the transition from ''semi''-poikilotherm to homeotherm. Besides providing optimum temperature conditions, additional nutritional support can also help these chicks to make a good start.

Advice

For eggs and chicks from very young breeders (25–30 weeks):

- set eggs four hours earlier or pull chicks four hours later to increase the incubation time;
- adjust the temperature setpoints to achieve an average eggshell temperature of 100°F;
- provide nutritional support directly after hatching;
- lower the height of the drinking lines;
- increase the brooding temperature to achieve the correct rectal temperature of 104–105°F. □

Slower growing broilers coming in 2026

February 2022 at WattPoultryUSA-digital.com by Austin Alonzo

A portion of the domestic industry will be raising slower growing birds in the future. Exactly how much is unclear. *Click here for full article* □

Accelerating the Genetic Selection in Ducks

January 3, 2022 at PoultryWorld.net by Fabian Brockotter

In recent years, layer and broiler breeding have seen the introduction of genomics. For duck breeders, the wait was for the development of a microchip which could determine their specific traits. After the French INRA institute plotted multiple genetic lines, the long-awaited chip could finally be created. Duck breeder, Grimaud Frères, has hatched its first ducklings combining traditional genetics with genomics. *Click here for full article* □

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Study Shows Eating Meat Extends Human Life Expectancy Worldwide

February 23, 2022 at FeedStuffs.com sourced from The University of Adelaide

Has eating meat become unfairly demonized as bad for your health? That's the question a global, multidisciplinary team of researchers has been studying and the results are in — eating meat still offers important benefits for overall human health and life expectancy. Study author, University of Adelaide researcher in biomedicine, Dr. Wenpeng You says humans have evolved and thrived over millions of years because of their significant consumption of meat. *Click here for full article* ◘

KFC to launch plant-based chicken nationwide on January 10

January 5, 2022 at WattAgNet.com by Elizabeth Doughman

KFC will debut Beyond Fried Chicken in restaurants across the U.S. for a limited time beginning January 10, becoming the first plant-based poultry product created for a national chain. *Click here for full article* ◘

The Ag Watchdog

McDonald's Receives New Pork Pressure

This week activists received a slate of media coverage in their new pressure campaign against McDonald's. Activist investor Carl Icahn is backing two outside board of directors' candidates after complaining about McDonald's pork sourcing policy.

[Activist Groups] Push Ban on Ventilation Shutdown

In an op-ed in the Chicago Tribune, the CEOs of [two activist groups] slammed the American Veterinary Medical Association for allowing ventilation shutdown, a method for mass euthanasia of pigs. VSD became an issue early in the pandemic when [an activist group] targeted a pork producer for using it during the supply chain disruptions.

Consumers Concerned About Fake Meat's Ultra-Processing

A new survey finds that consumers are increasingly concerned about fake meat. Compared to 2019, the percentage of respondents in the survey who are concerned that fake meat is processed or concerned about long-term health effects has nearly doubled. Information about the healthfulness of meat alternatives is a major foundation of our CleanFoodFacts.com national education campaign. ◘

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NCC responds to The New York Times' latest attack on chicken producers

On February 11, 2022

The National Chicken Council today released the following statement in response to a New York Times Opinion video attacking U.S. chicken production and advocating for increased food costs.

"The New York Times Opinion video, "The True Cost of Cheap Chicken," is a vegan propaganda piece whose goal is to make meat more expensive, as clearly articulated in the final line of the video, "Chicken should be $6 a pound, not $1 a pound." The activist group behind the video, Mercy for Animals, spends tens of millions of dollars a year imposing their agenda on consumers – which is eliminating animal agriculture and meat all together – and ultimately encouraging a vegan lifestyle.

"The fact that the New York Times is promoting a video that advocates for a 500 percent increase in the cost of food shows just how out of touch they are with most Americans, who are already living with the highest inflation in 40 years. The latest Consumer Price Index released today marked the biggest gain since February 1982 and was even higher than the Wall Street estimate. And at the same time, the Biden administration is discussing additional regulatory burdens that would only add more costs to chicken producers and already soaring grocery bills for Americans.

"The health and proper treatment of our chickens is not only an ethical obligation, it makes good business sense. Companies do everything possible to help the farmers raise the best, healthiest chickens. The ultimate success of the company depends on the success of the farmer. Choosing to enter into a partnership with a chicken company helps farmers manage their risk, share costs and earn a guaranteed and steady source of income. The system has helped tens of thousands of families on small farms stay on the farm, who otherwise may have had to get out of agriculture altogether.

"We take pride in the care of our chickens, but we know it's on us as an industry to do a better job of providing more information on how our food gets from farm to table. Food is an emotionally charged topic, and with conflicting information readily available online and on social media, it's understandable people have questions. That's why the National Chicken Council created Chicken Check In, our digital hub and way of inviting consumers to take a look at how we're progressing as an industry in providing safe, healthy and affordable food." □

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Meat/alt protein

Tyson's Ramsey, Adcock join Beyond Meat executive team

December 8, 2021 at WattAgNet.com

Beyond Meat has hired Doug Ramsey and Bernie Adcock, both longtime leaders at Tyson Foods, as chief operating officer and chief supply chain officer, respectively. *Click here for full article* ◘

Tyson, ADM fund bid to bring cultivated meat to U.S.

December 20, 2021 at WattAgNet.com by Elizabeth Doughman

Future Meat Technologies raised $347 million in a series B funding round led by ADM Ventures, part of Archer-Daniels-Midland Co., and Tyson Foods Inc. The cultivated meat company plans to use the funding to build a U.S. production facility. *Click here for full article* ◘

Kraft Heinz partnership to drive plant-based technology

February 24, 2022 at WattAgNet.com by Elizabeth Doughman

A joint venture between The Kraft Heinz Company and food tech startup TheNotCompany aims to use artificial intelligence to create plant-based versions of popular Kraft Heinz brands, including Oscar Mayer hot dogs. *Click here for full article* ◘

Robots are ready to meet poultry processing challenges

December 2, 2021 at WattAgNet.com by Meredith Johnson

How will the poultry industry utilize robots in an area that can be unpredictable and unstructured, like the front end of a plant? *Click here for full article* ◻

FSIS Notice 34-21 [mask mandate] has been rescinded

March 1, 2022 from USPOULTRY

FSIS-regulated establishments are no longer subject to suspension or withdrawal of inspection services for failure to require their employees to wear masks when FSIS inspection program personnel are present. This is a result of recent declining rates of COVID-19 infection and hospitalizations across the U.S., and the release on February 25, 2022, by the Centers For Disease Control and Prevention (CDC) its prevention steps that should be taken based on COVID-19 community levels. Please find the link to the FSIS announcement and the CDC recommendations update. ◻

USDA FSIS: Notice of Request for a New Information Collection - Poultry Finished Product Standards

Posted February 28, 2022 at fsis.usda.gov

In accordance with the Paperwork Reduction Act of 1995 and Office of Management and Budget (OMB) regulations, the Food Safety and Inspection Service (FSIS) is announcing its intention to request a new information collection for poultry Finished Product Standards (FPS). This is a new information collection because the existing forms for FPS are in use without approval. There is an estimated annual burden of 68,899 hours. *Click here for full article* ◻

NEC Blog the Latest Attempt to Paint Meat Industry as Food Inflation's Boogeyman

Washington, D.C. (December 11, 2021) – The most recent drumbeat from the White House National Economic Council (NEC) blaming the meat and poultry industry for their failed policies and rising meat prices came yesterday in a blog post. Let's look at the facts according to the federal government's own data.

The Consumer Price Index for All Urban Consumers (CPI-U) increased 0.8 percent in November on a seasonally adjusted basis after rising 0.9 percent in October, the U.S. Bureau of Labor Statistics reported on Friday. Over the last 12 months, the all items index increased 6.8 percent before seasonal adjustment.

Gasoline prices rose another 6.1% for the month – the same increase as October– bringing the annual increase to 58.1%. Fuel oil shot up 3.5%, for a 59.3% year over year surge.

Unusually high demand is a crucial factor driving higher inflation. Spending has jumped as more people received Covid-19 vaccinations, businesses reopened, and people returned to work. The shortage of workers is also driving up wages, putting pressure on companies to raise prices.

So, where are Americans seeing inflation? Nearly every part of their livelihoods, according to the latest CPI:

- Gas +58%
- Rental cars 37%
- Propane 34%
- Used cars 31%
- Utility gas service 25%
- Hotels 22%
- Bacon 21%
- Beef 21%
- Pork 17%
- Furniture 14%
- Fresh fish/seafood 11%
- New cars 11%
- Tires 11%
- Chicken 9%
- Women's dresses 9%
- TVs 8%
- Eggs 8%
- Apples 7%
- Restaurant prices 6%
- Electricity 6%

"A 9 percent year over year price increase for chicken is barely outpacing inflation and that's despite the fact that our major inputs like corn, soybeans, gasoline, packaging and transportation are all up double and triple digits, on top of a labor shortage. Demand is outpacing supply. It's Economics 101," said NCC President Mike Brown. "It's time for the NEC to stop playing chicken with our food system and stop using the meat industry as a scapegoat for the significant challenges facing our economy.

"This is all on top of truck driver shortages, backlogs at our ports, shipping delays, and a government spending spree that's causing an inflationary spiral," Brown added. "This administration should be looking at the chicken industry as a model of success, instead of creating a boogeyman to justify an unnecessary and expensive foray into our food supply."

The public knows and understands that unnecessary regulations will have the opposite effect on prices – at the worst possible time.

A recent I&I/TIPP Poll* asked respondents, "Who or what is primarily responsible for the supply chain crisis?" Most economists agree that the inflation and supply-chain crises are tightly linked.

Among those surveyed, 36% blamed "President Joe Biden and his administration" for the monumental supply-chain disruption, while 27% pointed their fingers at "government regulations." All told, 63% blamed the government as the source of the problem, versus 15% who said the "private sector" and 14% who said "the workforce."

"It's time to stop playing the blame game and time for government and the private sector to sit down and work together to address the root challenges affecting our economy and find solutions," said Brown. ◻

Propane at $2.00/gal?

The Mont Belvieu Propane **Spot Price** on Feb. 28, 2022, has climbed to **$1.375/gal**. after starting out the new year at $1.123/gal. The lowest price experienced in 2021 was $0.736 on April 19th and the highest spot price last year was $1.495 on Oct. 6, 2021, which was the highest experienced since Feb. of 2014.

Allowing for an average of $0.60 per gallon for tariffs, handling and delivery to most areas, **the average current retail prices can be expected to be roughly $1.98/gal.** Larger accounts can often negotiate a lower price agreement by as much as $0.05/gal., or more. To follow Mont Belvieu spot pricing go to https://www.eia.gov/dnav/pet/hist/eer_epllpa_pf4_y44mb_dpgD.htm. TPA's allied member propane companies would love to discuss all of this with you to obtain best pricing and service and their contact information is listed at the back of this newsletter.

Quotes for Mont Belvieu **propane futures** are currently at $1.53 for March 2022, with a steady decline projected throughout the course of the year back to $1.27 for December. To follow the futures trading for spot pricing go to https://www.cmegroup.com/trading/energy/petrochemicals/mont-belvieu-propane-5-decimals-swap.html#.

For **REAP grant funding** for energy retrofit projects go to https://www.rd.usda.gov/programs-services/rural-energy-america-program-renewable-energy-systems-energy-efficiency. The next **application deadline is March 31, 2022**.

For an update on current **FMCSA emergency declarations** and **HOS waivers** go to https://www.fmcsa.dot.gov/emergency-declarations. ◘

Natural Gas Overview

March 2, 2022 EIA
Source: https://www.eia.gov/naturalgas/weekly/

- **Spot Prices**: Natural gas spot price movements were mixed this report week (Wednesday, February 23 to Wednesday, March 2). The Henry Hub spot price rose from $4.57 per million British thermal units (MMBtu) last Wednesday to $4.65/MMBtu yesterday.
- **International Spot Prices:** International natural gas spot prices rose this report week. Bloomberg Finance, L.P. reports that swap prices for liquefied natural gas (LNG) cargos in East Asia for the balance of March rose $5.48 to a weekly average of $31.19/MMBtu from $25.71/MMBtu last week. At the Title Transfer Facility (TTF) in the Netherlands, the most liquid natural gas spot market in Europe, the day-ahead prices rose $15.34 to a weekly average of $41.06/MMBtu amid the Russian invasion of Ukraine and resulting uncertainty in European natural gas markets. In the same week last year (week ending March 3, 2021), prices in East Asia and at TTF were $5.93/MMBtu and $5.70/MMBtu, respectively.
- **Futures**: The March 2022 NYMEX contract expired Thursday, February 24, at $4.568/MMBtu, down 6 cents from last Wednesday. The April 2022 NYMEX contract price increased to $4.762/MMBtu, up 17 cents from last Wednesday to yesterday. The price of the 12-month strip averaging April 2022 through March 2023 futures contracts climbed 16 cents to $4.890/MMBtu.
- **Storage:** The net withdrawals from working gas totaled 139 billion cubic feet (Bcf) for the week ending February 25. Working natural gas stocks totaled 1,643 Bcf, which is 12% lower than the year-ago level and 13% lower than the five-year (2017–2021) average for this week. ◘

FERC Denies Utilities' Request to Leave TVA

October 20, 2021 at PV Magazine by Tim Sylvia

FERC declined a complaint made against TVA by several member power companies seeking transmission service and freedom from their supply deals. Click here for full article ◘

Farm Bureau Asks EPA to Withdraw Proposed WOTUS Rule

Feb. 7, 2022. The American Farm Bureau Federation submitted comments to the Environmental Protection Agency on the agency's plan to write a new Waters of the U.S rule. AFBF, along with 21 other agricultural organizations, recommended the Biden administration withdraw the proposed rule, citing jurisdictional issues and lack of stakeholder engagement. Concerns with the new proposed rule include:

- It will profoundly affect everyday farming and ranching activities through increased permitting requirements;
- Unclear rules could lead to potentially unlimited jurisdiction, including the unconstitutionally vague significant nexus test;
- The expansion of federal jurisdiction exceeds limitations set by Congress;
- The proposed rule exceeds the scope of the federal government's authority.

Read the full comments here. ◘

Modernization of Agriculture Sales Tax Exemptions in TN

House Bill 1405 (Halford) has been deferred to the special calendar by the House Finance, Ways & Means subcommittee. Companion SB0905 (Stevens) made it to the Senate Finance, Ways & Means subcommittee during the last session. This bill is asking to modernize the current ag sales & use tax exemptions in TN to make it easier for everyone to understand and for the state to implement. HB1405 is asking to match the manufacturing section of the state code in TN so in the future as technology changes, the agriculture community can work with the Department of Revenue to resolve issues. This bill, if passed, is written to allow farmers to remain competitive with farmers in other states. HB 1405 however has a very significant fiscal note attached (over $2.8 mln annually for the state, and over $1.1 mln at the local levels), so will be subject to overall state budgeting considerations before it can be passed. The TN Poultry Association would thank and recognize the TN Farm Bureau Federation for their great work in support of this proposed legislation. For more information click here. ◘

House passes America COMPETES Act, includes ocean shipping reform legislation

February 11, 2022 by NCC

The House recently passed the America Creating Opportunities for Manufacturing Pre-Eminence in Technology and Economic Strength (COMPETES) Act, a nearly 3,000-page, $350 billion bill which addresses many sectors of the U.S. economy and seeks to enhance U.S. economic competitiveness. The legislation included the Ocean Shipping Reform Act, which would address port congestion and unreasonable practices from ocean carriers.

The House passed the Ocean Shipping Reform Act as a standalone bill in December but took the extra step to include it in the larger America COMPETES legislation, which now heads to a conference with the Senate.

The Senate last June passed the U.S. Innovation and Competition Act (USICA), a nearly 2,400-page, $250 billion bill similar bill to the America COMPETES Act but does not include the ocean shipping legislation. The Senate had not even had a version of the ocean shipping bill introduced at the time USICA passed in 2021.

USICA will now need to be conferenced with the COMPETES Act before becoming law. Conferees would need to decide whether to include the Ocean Shipping Reform Act in its final bill.

NCC joined over 100 companies and associations in August 2021 expressing support for the House version upon its introduction.

The Ocean Shipping Reform act would update the Shipping Act, which governs the practices and authorities of the Federal Maritime Commission (FMC), to address a growing shipping crisis.

Vessel-operating common carriers (VOCCs) have been delivering massive volumes of imported shipments to U.S. ports and then electing to leave without refilling empty containers with American goods and products. Whereas shipping containers filled and imported goods are normally unloaded, sent to rural areas, filled with agricultural commodities, and then shipped abroad, the lucrative freight rates paid by the import cargo, combined with congestion at ports on both coasts are leading VOCCs to immediately return empty containers to their overseas ports of origin.

Port congestion is exacerbated by a lack of sufficient labor and automation, a lack of appointments for truckers to enter terminal gates to retrieve import containers, or bring in containers with export cargo, or empty containers, carrier and chassis company agreements causing of chassis to carry containers in and out of terminals, state laws limiting chassis availability, port policies limiting available refrigeration plugs and movement of refrigerated containers, and lack of capacity of near-port distribution centers to accept/process massive volumes of import cargo. This situation is exacerbated by carriers' failure to provide accurate notice to U.S. exporters of arrival/departure and cargo loading times, then imposing financial penalties known as detention and demurrage fees on exporters for "missing" those windows. The FMC has found this practice to be unreasonable.

Full text of the House version of the Ocean Shipping Reform Act can be found here. Full text of the Senate version can be found here. ◘

Sprinklers help sustainably prevent heat stress in poultry

December 30, 2021 at WattAgNet.com by Elizabeth Doughman

The evaporative technology provides indirect cooling for the birds.

Sprinkler technology can offer broiler producers a way to conserve water and improve feed conversion ratios efficiently and sustainably, while also preventing heat stress, according to research from the Arkansas Agricultural Experiment Station, the research arm of the University of Arkansas System Division of Agriculture

"This is a very efficient way to cool chicken in comparison to the widely popular cool cell evaporative system," Yi Liang, associate professor of biological and agricultural engineering and faculty with the Center of Excellence for Poultry Science within the University of Arkansas System Division of Agriculture, said.

"The biggest benefit is that you can use less cooling water on the farms," she added, noting that sprinklers can result in an average water savings of 67%.

"Embrace the sprinkler," encouraged Walter Bottje, an experiment station poultry science physiologist. "The research shows that it works, and it can really reduce the amount of water needed during the summer months."

Artificial rain to cool the chicken, not the house

Low-pressure sprinkler technology, also known as surface wetting technology, relies on a water regulator to maintain pressure between 30 and 50 psi. Using nozzles spaced evenly through the house, the system creates artificial rain made of coarse water droplets that cools the surface of the chicken.

"The sprinkler does not attempt to cool the air inside the house," Yi explained. "The house can stay fairly warm, but the birds receive water as needed."

The sprinklers provide direct cooling for the birds through intermittent spray. A temperature sensor in the poultry house controls the frequency (typically between 10 and 30 minutes) and the duration of each spray (typically between 20 and 40 seconds).

Benefits of sprinklers to poultry

Exposure to a combination of high heat and high humidity can cause heat stress, leading to increased morbidity and mortality. When chickens experience heat stress, the first thing that happens is a reduction in feed intake and an increase in corticosterone levels, a marker of stress.

In a test, the researchers found that broilers raised in houses with sprinklers showed lower corticosterone levels and better feed intake.

"It seems like the sprinklers alleviated the systemic and local stress by reducing plasma corticosterone levels and heat shock protein expression in internal organs such as gut and brain. This, in turn would preserve energy, as evidenced by down regulation of the energy sensor adenosine monophosphate protein kinase (AMPK). The preserved energy would be used for growth instead of repair the damage-caused by stress" explained experiment station poultry science professor Sami Dridi. □

The Positive Impacts of Increasing Ventilation During Feeding in Broiler Breeders

January 31, 2022 in PoultryProducer.com by Kevin Odenbach

Modern broiler breeders have an amazing ability to convert feed nutrients for growth and egg production. Post-feed consumption, a hen's body temperature increases rapidly (heat increment of digestion). Hens on slats post-feeding have been observed to be in some level of heat stress. Consequences of overheated hens include a decrease in feed intake or increase in feed cleanup time (delaying egg gathering pattern), decreased production, eggshell quality decline, and mortality. Any signs of heat stress should be addressed immediately.

A fan program, which is used to remove the metabolic heat, must be adjusted seasonally. Keep in mind that all fans are usually running in the summer by default. However, during the other seasons, additional fans should be used during feeding and throughout production. This program of increased ventilation post-feeding is most effective in the fall, spring, and winter. In the summer, there is usually adequate air speed.

Keep hens cool to reduce stress-related illness and mortality

In an early investigation, an increase in hen mortality was noticed and diagnosed as E. coli peritonitis. While investigating, it was discovered that days earlier, some of these hens appeared to have heat stress post-feeding. The hens were panting with wings stretched out, and the most severely affected hens were primarily on the slats. To alleviate metabolic heat stress, fans were turned on at the same time as the lights and continued to run until 2 hours after cleanup. These simple actions were effective in alleviating feeding-related heat stress and eliminating the associated mortality. While there are many reasons for E. coli peritonitis mortality that is not associated with heat stress or removing heat, in many cases, running fans to remove metabolic heat will decrease hen mortality.

This investigation revealed the importance of keeping hens cool as even a relatively short time frame of overheating can increase the mortality in hens days after the insult. Moreover, as noted, hens that experience metabolic heat stress can reduce feed intake or delay feed intake. A consistent reduction or delay in feed intake can cause declines in egg production, a delayed daily egg-laying pattern, a shell quality decline, and an increase in mortality.

Chickens rely on non-feathered areas of their bodies, such as wattles, breasts, and under the wings, to remove excess body heat. Hens do not sweat. This is one reason why birds may stretch out wings when they are overheated. Additionally, hens may pant to reduce body temperature, and with panting, hens may develop electrolyte and pH imbalances. Keep in mind that hens may increase their water intake to rehydrate. Therefore, it is important to always provide fresh, cool, and clean water and ensure that the water pressure in the drinking lines is sufficient.

Management actions

Create an environment inside the breeder house that allows the flock to remove excess body heat and remain comfortable. Providing good ventilation during feeding time will reduce metabolic heat stress and prevent a decrease in feed intake as well as reduce mortality. Panting birds post-feeding is an indication of heat stress and should be addressed immediately.

Temperature, airspeed, and humidity are components of an effective temperature the birds feel. Metabolic heat during digestion will increase body heat as hens feed. To alleviate the metabolic heat, run additional fans from the time feed is distributed until 2 hours after cleanup. Additional fans must be run automatically (through a controller) with careful oversight. The risk of failure is high if fans are initiated each day manually. Consider putting the fans on a timer with a thermostat override if there is no controller. Production may drop if the birds are too cool. Therefore, monitor the airspeed and effective temperature closely.

Benefits of a fan program

When hens are heat stressed, feed cleanup and digestion time increase. Moreover, egg production and eggshell quality can suffer as a result of heat stress. The benefits of using a fan program to keep hens cool during feeding include:

- Decrease in mortality.
- Decrease in E. coli peritonitis.
- Increase in egg production.
- Increase in eggshell quality.
- More eggs early in production.
- Improved digestion of feed.

Conclusions

Preventing heat-stressed hens during feeding will benefit producers by improving production performance and make flock management easier. Additionally, although we understand some of the impacts of heat stress on egg quality, there is more to learn. To further our understanding, we are currently conducting research to understand how heat stress can impact eggshell quality. Our findings will be communicated with producers and customers to benefit their production efforts and help flocks reach their full genetic potential.

About the author

Kevin Odenbach has experience in the poultry industry as a pullet/breeder technician, hatchery manager, and live production manager. At Cobb-Vantress, Kevin is a technical service advisor in North America. He holds a bachelor's degree in poultry science from Texas A&M University. □

Ramp up poultry drinking water sanitation measures in the wake of Avian Influenza virus outbreak

At TSU Extension by Pramir Maharjan, Sam Nahashon, Shawn Hawkins, Yang Zhoa, Tom Tabler and Susan Watkins

Follow strict biosecurity measures during daily farm operation

The US has witnessed occasional outbreaks of high- path avian influenza virus (HPAI) in commercial poultry farms and backyard flocks. There have been recent outbreaks of HPAI observed in multiple states including to our neighboring states, Kentucky (broilers) and Virginia (backyard mixed species) (USDA-APHIS, 2022; CDC 2022). Wild birds particularly migrating waterfowls are the carriers of the avian influenza viruses that are found to be freely circulating in these populations.

Domesticated birds acquire HPAI through direct contact with waterfowl infected with viruses or through other common transmission routes such as infected poultry or inanimate surfaces that are contaminated with the viruses. The outbreak of HPAI could pose a substantial economic loss for the US poultry industry due to massive culling practices that are required of infected flocks, and the potential trade restrictions. For farms located near areas with virus outbreaks, strict biosecurity protocols are essential. Biosecurity practices should include using designated farm clothes that are only used while working on the farm, disinfecting footwear and vehicles while entering and working in poultry premises and disinfecting shared equipment. Strict diligence in following all possible biosecurity measure during daily farm operation is imperative when working amidst disease outbreaks such as HPAI.

Drinking water sources can be a vector for high-path Avian Influenza virus

One operational biosecurity practice that is often overlooked is treating drinking water supplies for birds. The cost of not treating water supplies can be higher especially during the time of disease outbreak such as HPAI. The enclosed water supplies in the poultry operation are often "out of sight out of mind" for most poultry growers and could remain as a disease threat when water sanitation measures are not practiced. The avian influenza viruses easily grow and thrive in water sources and supplies (Domanska-Blicharz et al., 2010; Lebarbenchon et al., 2010). Backyard poultry are vulnerable to HPAI infection because they often share surface water with wild waterfowls who carry avian influenza viruses. Poultry farms that intersect the North American flyways of waterfowl migration pathways need to be especially cognizant about treating water supplies and should enforce strict water treatment strategies. The droppings from HPAI infected wild fowls on land surfaces can easily seep into the ground during rain events and contaminate underground water sources. This phenomenon of ground water contamination can be even more prevalent in Tennessee as the state has karst type topography. Droppings from infected birds could directly contaminate surface water bodies. Surface water bodies often interact with the underground water leading to cross contamination between water bodies. So, farms that get their water from underground sources need to be diligent about treating water.

Figure 1.
Treat water to ensure microbially safe drinking water to poultry.

Effectively treat water supplies during the event of disease outbreak

The goal of poultry water sanitation procedures and sanitizer/disinfectant products is to target and eliminate the microbial challenges that exist and thrive in water supplies whether they are bacterial, fungal, viral or protozoal (Figure 1.) Ideal disinfectants used as a drinking water sanitizer should create disinfectant residuals throughout the distribution system and should inactivate microbes, control biofilms or neutralize undesired contaminants. Products such as chlorine, chlorine dioxide, and hydrogen peroxide are commonly used as poultry drinking water sanitizers and are known to be effective against microbes including the HPAI viruses (USDA-APHIS, 2018; Zou et al., 2013; Lenes et al., 2010). Some considerations while treating poultry drinking water supplies:

- Proper application of sanitizer dose is critical for good sanitizing efficacy. Start with recommended levels of sanitizer then adjust sanitizer concentrations as needed based on microbial testing results.
- Starting points for sanitizing residuals are free chlorine- 2-4 ppm, free chlorine
- dioxide-0.5-0.8 ppm and hydrogen peroxide- 25-75 ppm.

- There are farms that can manage perfectly on microbes with 1 ppm free chlorine and then there are those that require as much as 6-8 ppm. These differences depend on what minerals are present in water and the overall hygiene of the water system. Make sure to measure the sanitizer residual concentration and microbial efficacy of sanitizer by taking drip and swab samples at the end of the water lines (Figure 2). When water sanitizers are in place and at appropriate concentrations, then aerobic plate count results should be 0 cfu/ml. *continued on next page*

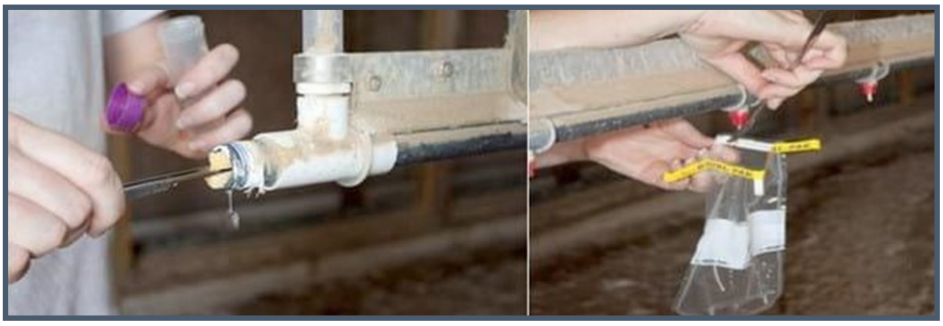

Figure 2. Taking swab and drip samples to monitor the residual and microbial efficacy of water treatment

Ramp up poultry drinking water sanitation measures in the wake of Avian Influenza virus outbreak

(continued from previous page)

- Ideally, water samples collected for evaluating sanitizer effectiveness should be collected sterilely and in containers that have sodium thiosulfate to neutralize the sanitizer. Samples should be shipped overnight using ice packs in a Styrofoam box to service labs for microbial enumeration. You can also contact the author at pmaharja@tnstate.edu for information on sample shipping and lab analysis.
- Once a residual level is correlated with no microbial growth in the water supply at the drinker, then establish a residual monitoring program and document the test results.

The best indicator of the effectiveness of water sanitation programs will be an evaluation of what microbial populations are living in the water supplies. Consistent water sanitation practices on farm can keep the microbial levels in water under control in the event of occasional microbial surge due to day-to-day water quality fluctuations (Maharjan et al., 2016). Daily water sanitation programs are an excellent tool to help prevent health challenges including the HPAI threat being introduced to flocks via the water system. Have water sanitation practice as a mandate in your operation when disease outbreak in the surrounding farm is noticed especially if the disease agent can survive in water sources or water systems. For author credits and supportive references go to TSU's Extension website for this publication. □

Animals and food don't care how you vote! *(continued from page 8)*

Take time to let your experiences and knowledge simmer and meld together. It's so worth it! Have patience and continue to learn. Thirdly, roll up your sleeves and take initiative. Don't wait for someone to tell you to do something; if you see something needs to be done, do it. And, always, always put as much money as allowable in a retirement plan.

What advice do you wish someone had given you at that point in your life (or that you had listened to?!)
(Insert hearty laugh) Have you been talking to my mother? She would tell you I don't do a good job of listening to advice! Although, my lack of patience has most likely been the bane of her existence. There was a point in my life where I wished I knew what was going to happen every day of my future so I could be prepared. I'm glad I've mellowed somewhat and learned to enjoy the journey. Even so, I do still like to have a plan, and I don't like to let grass grow under my feet.

It's hard to pinpoint one piece of advice that stands out as I've received so many good snippets at different points in my life. The readers would soon get tired if I listed all the statements that have impacted me. My late father always said "Get an education. Your car can be repossessed, your house can be in foreclosure, but your education can never be taken away." He felt strongly about education whether it be a trade school or a university. He was a college graduate who returned to the farm. My mother would say "it'll all come out in the wash." It was a great reminder that everything would be ok and what I was experiencing was only a season, not a lifetime. One good piece of advice I received early in my career was to never be the only person who knows your job. If you are, you aren't promotable.

You have a very strong passion for mentoring young women in agriculture – what organizations and events do you support and highly recommend, and why?
This is a passion I have grown into, or maybe I should say aged into. If I can give sound advice and insight, it's very gratifying. When I receive thanks for an impact I've made, I'm immensely rewarded. I like to know I've had an influence on, and been able to propel, these new professionals toward success.

The newly formed (this year) Women's Meat Industry Network (WMIN) includes a phenomenal group of women. This organization is "passionate about education, development, promotion, and retention of women in the meat and poultry sectors". The group is not exclusive to women but open to anyone with an interest in promoting its values, and I currently serve on the mentor committee. Women in Agribusiness (WIA) is another great organization that is open to women in all areas of agriculture through the "sharing of business knowledge and industry innovations (which) is at the forefront of helping women excel". Several college students from TN have been the recipient of WIA scholarships which pay for attendance to the annual summit. I would encourage anyone to find a cause that ignites something within and volunteer. Be involved in the community in which you work and/or live.

Earlier I mentioned the private Facebook page Dr. Brashears started. It is the most impressive professional page I'm a member of. Mindy is an incredibly good facilitator, asking thoughtful and insightful questions. The answers are as interesting as the group members. When I've needed a seafood or cheese expert, I can find one there. Likewise, I am able to help others if they need advice or knowledge in my area of expertise. Along the way, we throw in a few memes and industry jokes to lighten the day.

There are a lot of smaller meat and food processing companies popping up in TN and across the US that do not have qualified trained personnel on staff to guide them in the areas of food safety and compliance. Any general comments that you would like for them all to hear?
Animal welfare, food safety, and sanitation are non-negotiable! Just meeting the regulations or requirements are not enough. When I'm conducting training, I always say, "there are three entities you absolutely cannot harm and that's old people, babies, and animals." Think about that. If you harm any one of those groups, you are bound to be on the news and your business may not be able to overcome that type of publicity. Go above meeting the baseline. While the small processors may not have the resources for such a professional on staff, there are resources available to assist them. Anyone with expertise in these areas would be glad to train, or advise, these companies. □

Poultry House Lighting Tips

January 7, 2022 at PoultryProducer.com by Tom Tabler, et al

The poultry industry continues to see lighting problems related to a variety of issues, including farm wiring, screw shells, lamp style, light dimmer incompatibility, and LED lamp quality. However, the problem is not as complicated as we are making it out to be. Let's think about this for a minute.

First, **you get what you pay for**. LED lamps designed for home use are all omni-directional (give complete room coverage; walls, ceiling, and floor) and are low-priced. That works fine in a less demanding environment such as a home or office. However, these lamps do not work well in the harsh, more demanding poultry house environment, where all the light needs to be directed to the floor (where the chickens are); the low light level requirement challenges lamps and dimmers; and we are constantly dealing with dust, humidity, moisture, and ammonia.

If you purchase LED lamps designed for home use and put them in a chicken house, expect problems because they were not made for that purpose. For best performance in the chicken house, choose agriculture-rated lamps with a directional beam angle that places nearly all the light on the floor and with full dimming capabilities.

LED lamps rated for agricultural use are heavier because they have a better heat sink and use more expensive components to increase life expectancy, offer 100 percent dimming, and withstand the harsh poultry house environment. Know what you need when you visit the poultry supply store, and make sure that is what you get. Look at the box and make sure the wattage and Kelvin rating is correct. Don't just ask for an LED lamp and expect to be handed what you need—check to make sure you have what you need! Don't mix wattages, Kelvin ratings, or lamp brands. You won't be happy with the results if you do.

Second, **all light dimmers and LED lamps are not compatible**. Early on, we never gave this much thought, and we now have multiple combinations of lights and dimmers out there. Unfortunately, we now know that **many of these combinations were never meant to be used** and simply do not work well together. Dimmers that were great at dimming incandescent style lamps are often not compatible with modern LED lamps. These older dimmers are often leading-edge dimmers and are not designed to handle LED technology.

LED lamps in a poultry house should only be paired with a trailing-edge light dimmer. Trailing-edge dimmers are much newer and more sophisticated than leading-edge dimmers and provide smoother dimming control with less interference. They have been designed specifically for use with low-wattage LED lamps. This means, if you are using LED lamps with a leading-edge dimmer, you may experience lamp problems. You should switch to a trailing-edge dimmer **immediately**! Switching will solve a multitude of problems including strobing, flickering, uneven dimming, excessive lumen depreciation, and premature lamp failure. If you're not sure what dimmer you have, ask—there are people who can help you. Talk to other growers, live production personnel, and Extension Service personnel who have experience with multiple LED lamp and dimmer brands.

Also, realize that LED lamp manufacturers are now aware that leading-edge dimmers and LED lamps are not compatible. Some lamp manufacturers have already informed distributors that **lamp warranties are void unless light dimmers are upgraded** and compatible with LED lamps. Growers using anything other than a pure trailing-edge dimmer may find it difficult to maintain their lamp warranty. Be aware that, for dimmers with both leading- and trailing-edge capabilities, lamp manufacturers may likely choose to void the warranty because they cannot verify if lamps are being operated on a leading- or trailing-edge dimmer channel. Often growers, service techs, or catch crews will switch levels or dimming curves on the dimmer trying to find the best low-level dimming, unaware that, if they end up on a leading-edge channel, they may be damaging the lamps.

Third, **retrofitting an older farm with LED lamps may require a wiring system inspection and/or upgrade**. Moisture and ammonia over the years may have corroded fixtures and screw shells. Have a professional electrician check the wiring, connections, and screw shells. Understand that **nickel-plated brass screw shells are best** to deliver optimum LED performance. Poultry house conditions are extremely hard on equipment; if keyless sockets are more than about 3 years old—particularly if they are not nickel-plated—they should be inspected and may likely need to be replaced. Lighting programs are a critical part of broiler production today. It's important not to leave money on the table because of wiring issues, faulty sockets, an incompatible dimmer, or the wrong LED lamp. LEDs are proven, big-time money-savers, but you have to take care of them to get their benefits.

Fourth, **light leakage near cool cells and tunnel fans can have a negative effect** on even the best lighting programs. However, providing the optimum lighting environment is critical to bird welfare, physiological processes, and production efficiency. Light leakage at the fan end may affect the lighting program in much of the house. Consider fan shades as a possible remedy to this lighting problem.

Here are some tips to help with your poultry house lighting program:

- **Have an electrical professional check your farm and poultry house wiring** annually. Be sure all connections are secure. Many farm/house wiring systems need to be serviced or upgraded. Make sure lighting circuits have their own dedicated neutrals (not a common neutral) and good earth grounds.
- **Be sure your screw shells are not corroded and that fixtures are intact and tight**. Use nickel-plated brass screw shells for best LED lighting performance. Understand that one malfunctioning keyless socket on the line will affect the lighting operation of the entire house. *continued on next page*

Poultry House Lighting Tips *(continued from previous page)*

- **Closely follow your company's lighting program**. Intensity of light versus days of age in the grow-out are constantly changing and must match the birds' genetics and feed.
- Don't trust your eyes to be sure the light level is correct**. Buy an approved light meter and learn how to use it**. Frequently check light levels at the floor level between feed and water lines during the grow-out.
- Understand that **all dimmers and lamps are not compatible**. The old Edison bulb dimmer is not compatible with modern LEDs. Be sure your LED lamps and dimmers are fully compatible and operate smoothly from maximum intensity to lowest intensity. Poultry house dimmers should be trailing-edge (reverse phase) to avoid LED lamp damage and promote longer lamp life.
- Most **big box store LED lamps are designed for homes**, with two goals in mind: Complete room coverage (omni-directional) and low price (typically inexpensive components, sketchy dimming performance, and shorter life). In a poultry house's harsh environment, our goals are to direct nearly all light to the floor where the birds are, dim much lower and longer than in a home, and maintain longer LED lamp life by using LED lamps with a directed beam angle.
- Light intrusion and light leakage are major problems that can totally spoil a solid lighting program. Light intrusion occurs through various leaks and cracks, through vent boxes that do not have shades, and during tunnel ventilation when tunnel fans are running. Multiple tunnel fans running can destroy your lighting program for at least 30 or 40 percent of your house. **Consider fan shades on all tunnel fans**. □

Optimize your litter amendment through proper litter management during downtime

Submitted by Josh Payne, Ph.D., Poultry Guard®

Ammonia is detrimental to bird respiratory and eye health and can negatively affect flock performance through decreased weight gains and reduced feed efficiency. Ammonia and wet litter combined are the two major causes of paw lesions. Acidic litter amendments are commonly applied prior to bird placement to reduce litter pH and control ammonia. These litter amendments are either in the dry or liquid form. Acidified aluminum sulfate is the most common liquid form. Sodium bisulfate and acidified clay are the most common dry forms. All work by releasing hydrogen ions that attach to ammonia forming ammonium which further reacts with sulfate ions forming ammonium sulfate, a common fertilizer. Each litter amendment can effectively control up to a certain amount of ammonia. The question is, how much of an ammonia challenge are you putting them up against? Proper litter management during the downtime is key to reducing the ammonia challenge prior to litter amendment application. The following recommended practices during downtime can help maximize your litter amendment and increase the window for effective pH and ammonia control post bird placement.

Litter management for next flock begins first day of downtime. Poultry houses should be closed immediately after birds are removed for processing. The litter still contains heat from the harvested flock. By closing the house, you can utilize litter heat to drive off moisture and ammonia, thus reducing the amount that needs to be managed for the next flock. Minimum ventilation should be ran to exhaust both moisture and ammonia from the house. Closing the house also helps to keep litter temperatures warmer which can help obtain targeted floor temperature faster when pre-heating.

Manage litter within 48 hours of bird removal. Litter management (decaking, windrowing) should begin as soon as possible. Litter needs time to rest following these practices to allow for proper moisture and ammonia release. Delaying this process by a week pushes moisture and ammonia release one week closer to placement of the next flock and can create more of an ammonia challenge for the upcoming litter amendment application.

The practice of tilling or pulverizing litter is a practice used by some growers, but it can generate challenges. Tilling breaks chunks of wet litter (cake) into finer pieces which increases the surface area. Increasing the surface area of caked litter increases the ammonia challenge. It is usually best to simply remove wet caked litter from the house. Tilling caked litter also mixes moisture and oxygen into the litter base which can increase the bacterial challenge. If tilling, longer out-times are needed to effectively dry out the litter and release ammonia.

Litter should set undisturbed for at least 3 days prior to litter amendment application. This is especially crucial following windrowing. After windrowing, the litter is still biologically active and releasing large amounts of moisture and ammonia. Allowing at least 3 days for litter to 'rest' helps to reduce the ammonia challenge prior to applying a litter amendment. Recall, reducing the ammonia challenge results in increased litter amendment longevity.

Liquid amendment application procedures. Schedule liquid litter amendment application 2-4 days prior to placement with equipment up. Exhaust any ammonia from the house by turning on 2 tunnel fans upon applicator arrival. After application, close house and run minimum ventilation. Set-up house for bird placement and preheat per company guidelines. Run minimum ventilation during preheat.

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Optimize your litter amendment through proper litter management during downtime

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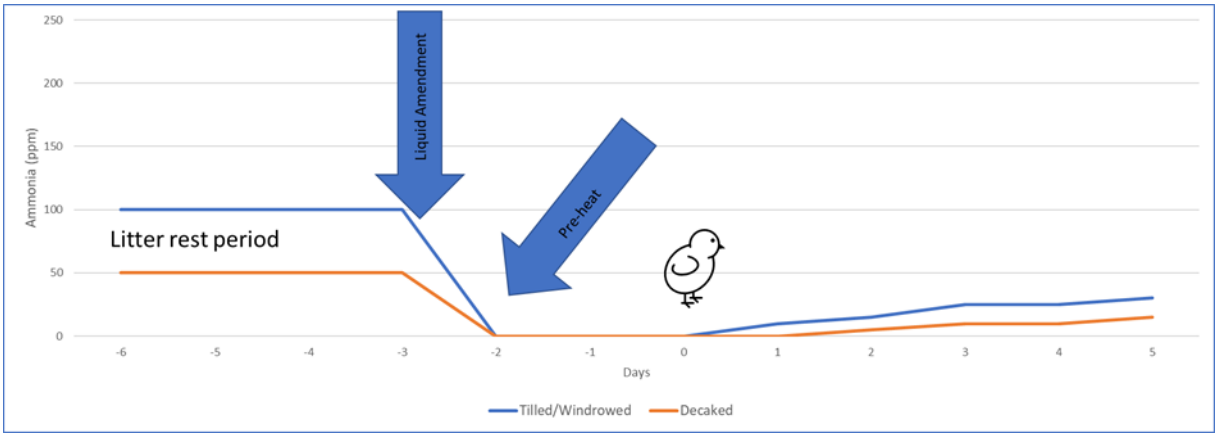


***Figure 1**. Proper litter management and application timing for liquid litter amendments*

Choose the litter amendment that best fits your operation. The choice of the proper litter amendment that best fits your needs is dependent on many factors. One of the biggest factors is length of downtime. Longer downtimes certainly allow for flexibility regarding both litter management practices and choice of a litter amendment. Shortened downtimes can make acidified liquid applications challenging since they are typically applied 2-4 days prior to bird placement. There may not be enough time to manage the litter and allow the recommended 3 days of rest prior to liquid litter amendment application. Windrowing typically requires at least 13 days of downtime if turning the windrows and allowing 3 days of rest after leveling windrows. Some producers prefer an ammonia-free environment during house set-up, and for this reason they apply a liquid amendment 2-4 days prior to placement. Others prefer to set-up for placement early and then have a dry acidified amendment applied as close to bird placement as possible.

Dry amendment application procedures. Schedule dry litter amendment application as close to placement as possible. Prior to scheduled application, set-up for bird placement and pre-heat per company guidelines. Exhaust ammonia from the house by turning on 2 tunnel fans upon applicator arrival. After application, close house and run minimum ventilation.

Regardless of litter amendment choice, it is crucial to exhaust any present ammonia from the poultry house by opening end doors and running 2 tunnel fans (side wall vents closed) prior to litter amendment application. In houses that are preheating, ambient air temperature will temporarily drop but will quickly return due to heat retained in litter. If ammonia is not properly exhausted from the house prior to litter amendment application, the litter amendment will react with the present ammonia within the house and a large portion of amendment will be wasted before birds are even placed. This will result in reducing the longevity of the litter amendment and the window of ammonia and pH control after bird placement.

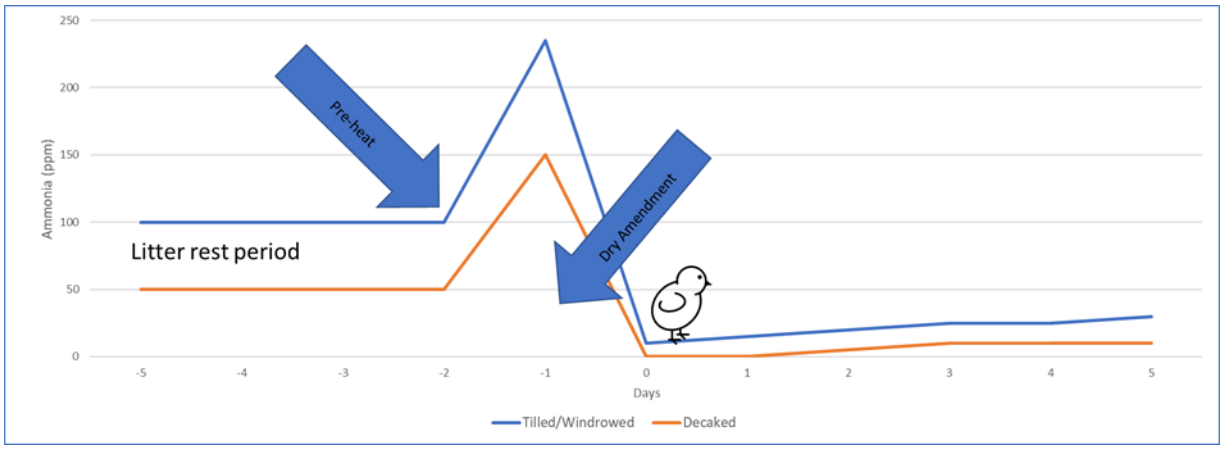


***Figure 2**. Proper litter management and application timing for dry litter amendments.*

Scavengers: Friend or Foe of the Poultry Industry

By Jeff Hill MSc, BS, Livestock Welfare Strategies

In North America approximately 1,500,000,000 pounds of broiler and 187,500,000 pounds of layer hen mortalities must be disposed of annually. Composting has become the most commonly utilized method of on-farm carcass disposal. However, this method can result in significant biosecurity risk, especially as the current outbreak of HPAI intensifies.

Composting is the decomposition of biodegradable organic matter by aerobic micro-organisms into a stable, soil-like material called humus. To be successful the system must be well managed and controlled. However, composting also has several disadvantages: it requires labor, space, facilities, readily available source of carbon, valuable nitrogen (N) is lost, and some specialized equipment may be needed.

Due to the management requirements to ensure a successful composting process, many producers allow, if not actively encourage, the scavenging of poultry carcasses from their disposal facility. In fact, scavenging of carrion has essentially become a de facto method of carcass disposal, especially in the South and Western US.

Surveys report counting a single to hundreds of scavengers within a poultry mortality composting facility, with producers describing more than a 50% reduction of carcass volume due to scavenging. Many see this as a benefit since this significantly reduces the effort requiredto manage the composting process and minimizes the amount of carbon resources required.

However, high pathogenic avian influenza (HPAI) is a major emerging disease, a cause of mass mortality in wild birds during outbreaks and a tremendous risk to the North American poultry industry.

As described by USDA-APHIS, wild birds common at the wildlife–agricultural interfacehave a high potential to share viruses with poultry when spillover occurs from wildlife to poultry, and then potentially spills back from poultry to wildlife.

Wild birds are considered natural reservoirs of avian influenza virus (AIV) and at least 105 species of wild birds have been reported to harbor these viruses. Surveillance programs have shown the highest number of detections of HPAI in wild birds occurs in waterfowl species.

However, the second highest number of detections occurs in scavengers and birds of prey. Scavengers are infected predominantly by ingesting infected prey as their feeding behavior is as an opportunistic predator and scavenger which has the potential to expose it to HPAI-infected prey. These birds may ingest a high quantity of infected meat and, therefore, are considered to be at high risk of becoming infected with HPAI, spreading the virus prior to dying of related diseases.

The spread of HPAI between poultry premises almost always follows the movement of contaminated people and equipment. With large flocks of scavengers roosting, feasting and defecating within the mortality composting facility it is highly likely that the HPAI virus will spread from the fecal matter of scavengers deposited within the composting shed to the poultry production barns on the bottom of boots, vehicles, or equipment.

Are the benefits of scavenging really worth risking your birds, your operation and even your industry? □

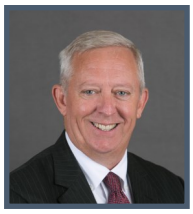
USDA appoints Arlisa Armstrong as the new RD State Director for TN

Dec. 17, 2021. Prior to her appointment as State Director, Arlisa Armstrong spent nearly three decades working in Rural Development in West TN. A native of Haywood County, Arlisa has spent time working with local leaders across West TN and understands firsthand the integral role USDA Rural Development plays in promoting growth and prosperity for rural communities. Armstrong successfully led several initiatives across a 12-county service area, effectively implementing residential, business, commercial and profit/nonprofit loan and grant making authorities for direct and guaranteed lending programs. Arlisa is passionate about her work and has made it her mission to bring opportunity to rural communities across the state. She is a graduate of MTSU with degree in Business Administration. □

John Litz has been appointed FSA State Executive Director for Tennessee

John Litz is a second-generation farmer operating a farm near Morristown, TN. His farming operation includes 3,000 acres of corn, soybeans, wheat, turf grass and a vineyard. After graduating from UTK, Litz managed animal health and assisted with row crop management at a 2500+ head feed lot operation. He has been involved in organizations such as UT Agriculture Regional Advisory Committee, BPOE (Elks Lodge), and numerous Farm Bureau committees locally and statewide. Litz also served four terms in the State House of Representatives for Hamblen County where he served on the Agriculture Committee, State & Local Government Committee, Election Subcommittee, and was an officer as a freshman on the Calendar and Rules Committee. □

Aiken appointed Deputy Commissioner for TDA



NASHVILLE– A farmer known for dedication to and leadership within the agricultural community, Jeff Aiken has been appointed Deputy Commissioner for the TN Dept of Ag.

Agriculture Commissioner Charlie Hatcher, D.V.M. made the announcement. Beginning Mar. 1, Aiken will oversee many of the day-to-day operations for the department and assist in directing staff, supporting programs and services, and collaborating on policy development.

This appointment follows the retirement of Deputy Commissioner Tom Womack, who worked for the Dept of Ag and the citizens of TN for more than 35 years.

"Jeff comes to this role with a wealth of experience and unwavering commitment to public service," Commissioner Hatcher said. "He has the skills and insight to support the department's efforts to advance agriculture and forestry through economic development, technological innovation, and stewardship of our natural resources. We are so pleased that he is taking on this challenge to help lead our industry into the future."

Aiken is the third generation of his family to farm in upper East Tennessee. He and his wife, Carol, his brothers, nephew, and niece manage 600 head of beef cattle and produce corn, tobacco, and straw on 900 acres in Washington and Greene Counties.

Aiken most recently led the Tennessee Farm Bureau as president for six years. That organization is the largest Farm Bureau in the nation with more than 680,000 members. He has also served on the boards for the American Farm Bureau Federation, Tennessee Chamber of Commerce, Tennessee FFA Foundation, and Tennessee State Fair Commission. In Washington County, Aiken is known for his leadership with the local Farm Bureau, Farmers Cooperative, and Cattlemen's Association Board. He remains active with Second Harvest Food Bank of Middle Tennessee and the First Farmers Bank Board of Columbia.

"As a lifelong farmer with a passion for agriculture, I'm excited to join Governor Lee and Commissioner Hatcher in advancing opportunities for rural communities," Aiken said. "Agriculture is the top industry in Tennessee and its success is vital to our state, our farmers, our foresters, and our citizens. I look forward to working closely with department staff and stakeholders to ensure a bright future for all."

"Jeff understands the needs of the farming and forestry families of Tennessee," Commissioner Hatcher continued. "He has the confidence and respect of that community and will continue to strengthen those relationships. As we aim to build resiliency in our food, fuel, and fiber industries and bolster rural economies, Jeff will be instrumental in furthering the department's goals."

Aiken is a 2019 graduate of Leadership Tennessee and a steadfast supporter of the youth organizations FFA and 4-H. He and Carol have been married for 30 years and reside in Telford, Tenn. where they are longtime members of the Oakland Cumberland Presbyterian Church. □

Humphreys County Farmer Elected President of Nation's Largest State Farm Bureau

The 100th annual meeting of the Tennessee Farm Bureau Federation symbolized not only a milestone for the organization, but also a turn of leadership at the helm of the nation's largest state Farm Bureau. During the annual business session, grassroots delegates from across the state unanimously elected Humphreys County farmer Eric Mayberry as the ninth president of the Tennessee Farm Bureau Federation.

As the third generation on his family's farm, Mayberry, 56, and his wife, Lynn, along with their three children, farm more than 1,000 acres of corn and soybeans as well as raise a herd of 200 beef cattle near Hurricane Mills. Their involvement in Tennessee Farm Bureau has been extensive. They first became involved through the Young Farmers and Ranchers program. Mayberry then began serving on the Humphreys County Farm Bureau Board of Directors in 1988 where he served as vice president and president. He was first elected to the Tennessee Farm Bureau Board of Directors representing District II in 2005 and then was elected vice president in 2015 where he has provided leadership for the past six years.

"It's a tremendous honor to be chosen as the president of such a long-storied organization as the Tennessee Farm Bureau," said Mayberry. "We're at a pivotal point in our organization's history – celebrating 100 years and looking back at where we've been, but also looking ahead to how we serve as the voice of agriculture for the next 100 years. I'm eager to get to work alongside so many others to ensure that voice remains strong."

As president of Tennessee Farm Bureau, Mayberry will serve and represent the more than 680,000 family members of the organization. He also will work with county, district, state and national leadership, partners in the agricultural industry, lawmakers, and other decision makers to ensure agriculture and rural Tennessee remain prosperous and successful.

In addition to Mayberry being chosen as president, Marion County farmer James Haskew was elected as the new vice president. Haskew, 59, and his wife, Shannon, farm more than 1,200 acres of row crops, 300 acres of hay, and have a 120 head commercial cow/calf operation and a value-added feed mill in South Pittsburg. Haskew has served on the Marion County board of directors for nearly 40 years, serving 22 of those as county president. He and Shannon were the second-place state winners in the Young Farmer of the Year competition in 1996, and then he was first elected to the Tennessee Farm Bureau Board of Directors representing District III in 2008. □

COMMODITY REPORT

March 3, 2022 at Chick-News.com by Simon M. Shane

Over the past five trading days prices for corn and soybeans fluctuated over a wide intraday range of up to three percent of value testing decade-high levels. The market was dominated by the invasion of Ukraine and reinforced by the effects of drought in Brazil and neighboring producer nations. Prices were also influenced by orders from China coupled with domestic demand.

- Factors influencing commodity prices in either direction included:
- Geopolitical tensions threatening wheat, corn and oilseed exports from Ukraine following the invasion together with possible impacts on Black Sea shipping. (strong upward pressure on corn and an indirect effect on soybeans)
- Persistent drought in Argentina, Paraguay and Brazil especially in that nation's Southern states. The USDA-FAS projects that collectively the three Southern hemisphere nations will be short 8.7 million metric tons of soybeans in 2022. (strong upward pressure)
- Anticipation and realization of some orders from China despite projections for reduced domestic demand in that Nation. China has scrubbed some orders with Brazil due to accumulation of soybean meal stocks. (transitory downward pressure)
- Soybeans up on demand for soy oil exacerbated by concerns over shortages of sunflower seed from Ukraine (upward pressure on soybeans and down on meal that is in oversupply)
- Slightly reduced weekly ethanol production responding to relatively lower domestic demand but with a recent fall in weekly stock levels (neutral pressure on corn)
- Imports of corn by Mexico (transitory upward pressure)
- Projections of volume and prices for corn, soybeans and wheat presented at the February 24th USDA Outlook Forum (upward pressure on price despite increased volumes)
- Purchase of commodities by hedge funds (upward pressure)
- Release of the February 9th WASDE #621 now in the review mirror. Projections for corn and soybean yield, acreage production were little changed, exports of soybeans were increased with a reduction in ending stocks. (upward pressure now receding).

Based on CME quotations U.S. farmers are now receiving and conversely livestock producers and ethanol refiners in the Midwest will pay above $7.50 per bushel for corn in March, up 6.3 percent from last week and up 15 percent over the past two weeks. Crushers will pay $16.90 per bushel for soybeans plus transport and basis during March 2022, up 0.7 percent from the February 24th quotation for March delivery. Soybean meal was down 1.3 percent or $6 per ton, percent for March delivery, reflecting high crush volume on export demand forsoy oil.

- The FAS Export Report released on March 3rd for the week ending February 24th reflecting market year 2021-2022, confirmed that outstanding export orders for corn for the new market year amounted to 22.29 million metric tons (877.3 million bushels) with 25.77 million metric tons (1,104 million bushels) actually shipped. During the past week orders for the 2021-2022 market year amounted to 0.49 million metric tons (19.1 million bushels) with 1.55 million metric tons (61.0 million bushels) shipped. For the current market year shipments of corn to date are 1.5 percent lower than for the corresponding week a year ago. For market year 2022-2023 outstanding sales this week amounted to 1.91 million metric tons (75.0 million bushels), with 0.23 million metric tons (8.8 million bushels) ordered for the following market year. (conversion 39.36 bushels per metric ton)
- The FAS Export Report released on March 3rd, 2022, for the week ending February 24th reflecting market year 2021-2022, recorded outstanding export orders for soybeans amounting to 9.39 million metric tons (345.0 million bushels) with 40.78 million metric tons (1,498.1 million bushels) actually shipped. Weekly soybean orders attained 0.86 million metric tons (31.5 million bushels) with 0.75 million metric tons (27.6 million bushels) shipped. For the current market year to date shipments of soybeans are 22.4 percent lower than for the corresponding week a year ago. For market year 2022-2023 outstanding sales amounted to 6.75 million metric tons (248.1 million bushels), with 1.39 million metric tons (50.9 million bushels) ordered this past week. (conversion 36.74 bushels per metric ton)
- For the week ending February 24th, 2021, 95,400 metric tons of soybean meal and cake were ordered for the market year 2021-2022, down 58.9 percent from the previous week. During the past week 143,000 metric tons of meal and cake was shipped, up 60.4 percent from the previous week and representing 2.7 percent of the total 5,187,900 metric tons shipped during the current marketing year to date.
- Projected harvests and ending stocks were documented in the February 9 th WASDE #621 providing projections on quantities harvested and the effect of trade and domestic consumption on ending stocks that were increased from the January report. Data did not take into account the invasion of Ukraine

The following quotations for delivery in the months as indicated were posted by the CME near close of trading on March 3rd, 2022, compared with values posted at close of trading on February 24th, 2021 (in parentheses):

COMMODITY		
Corn (cents per bushel)	March 748 (704)	May 747 (699)
Soybeans (cents per bushel)	March 1,687 (1,675)	May 1,671 (1,668)
Soybean meal ($ per ton)	March 461 (467)	May 453 (459)

continued on next page

COMMODITY REPORT *(continued from previous page)*

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

Corn: March quotation up 44 cents per bushel (+6.3 percent)
Soybeans: March quotation up 12 cents per bushel (+0.7 percent)
Soybean Meal: March quotation down $6 per ton (-1.3 percent)

The NASDQ spot prices for feedstuffs per short ton for March 2nd, 2022, with prices for the previous week were:

- Corn: $264 was $241
- Soybean Meal: $455 was $466

o For each $1 per ton (2.8 cents/bushel) change in corn the cost of egg production would change by 0.11 cent per dozen
o For each $10 per ton change in the price of soybean meal the cost of egg production would change by 0.44 cent per dozen

The respective changes in the prices of corn and soybean meal for March 2nd spot prices compared with February 23rd would increase nest-run production cost for eggs by 2.0 cents per dozen.
Year-to-date feed cost has risen by 6.3 cents per dozen *(rounded to 0.1cent)

According to the February 9thWASDE #621, corn harvested in calendar 2022 will attain 15,115 million bushels with ending stocks projected at 1,540 million bushels unchanged from the January 2022 WASDE Report. Total corn stocks on December 1st, 2021, amounted to 11.6 billion bushels up 3 percent from December 1st, 2020.

The USDA Outlook Forum on February 24th projected a corn harvest of 15,240 million bushels in 2022 from 92 million acres with a yield of 181 bushels per acre. The price for corn was estimated to average $5.40 per bushel. The estimate was prepared before the invasion of Ukraine and will obviously be revised according to developments.

Soybeans continue to be the beneficiary of export demand by China and other nations in addition to domestic livestock production and demand for soy oil. The USDA projected a harvest of 4,435 million bushels in the February WASDE #621. Ending stocks were lowered 7.1 percent to 325 million bushels. Total soybean stock on December 1st, 2021, amounted to 3.15 billion bushels down 14 percent from December 1st 2020 indicating the extent of exports during the 2020-2021 market year.

The USDA Outlook Forum on February 24th projected a soybean harvest of 4,490 million bushels in 2022 from 88 million acres with a yield of 51.5 bushels per acre. The price for soybeans was estimated to average $12.75 per bushel prepared before the invasion of Ukraine and will obviously be revised.

The CME soybean price for March delivery near close of trading on March 3rd 2022 was higher by 12 cents per bushel to 1,687 cents compared to 1,675 cents per bushel for March delivery last week. The sharp increase in the price of soybeans over two weeks attributed to the invasion of Ukraine and predictions of lower yields in Argentina, Paraguay and Brazil.

According to a release on February 15th by the National Oilseed Processors Association a record 182.2 million bushels of soybeans were crushed in January 2022 compared to an expectation of 186.6 million bushels. The January crush value was down 2.3 percent from the record December 2021 value of 186.4 million bushels.

On February 23rd, 2022, soybean meal was quoted on NASDAQ at $455 per ton, $11 per ton lower than last week and compared to a 52-week range of $312 to $466 per ton.

For consecutive calendar years 2017 through 2019 the U.S. supplied 34.4 percent of soybean requirements for China amounting to 95.5 million metric tons. This was followed by a decline to 16.9 percent of 88.5 million metric tons in 2018 and 16.6 percent of 88.0 million metric tons in 2019. The USDA anticipated that soybean imports by China would attain 95 million metric tons during the 2020-2021 market year but in reality, only 60.3 million tons was shipped through August 2021.

For the 2019/2020 market year China imported 2.1 million metric tons of corn from the U.S., 4.8 percent of total exports of 43.3 million tons, but 12 percent less than in the 2018/2019 market year. The USDA-FAS documented sales of U.S. corn to China through late August 2021 comprising the 2020/2021market year amounting to 73 million metric tons (2,876 million bushels) with 93 percent shipped.

For 2021 the U.S. exported corn to the value of $17,473 million 112 percent more than in 2020 and 10 percent of the value of all U.S. agricultural exports.

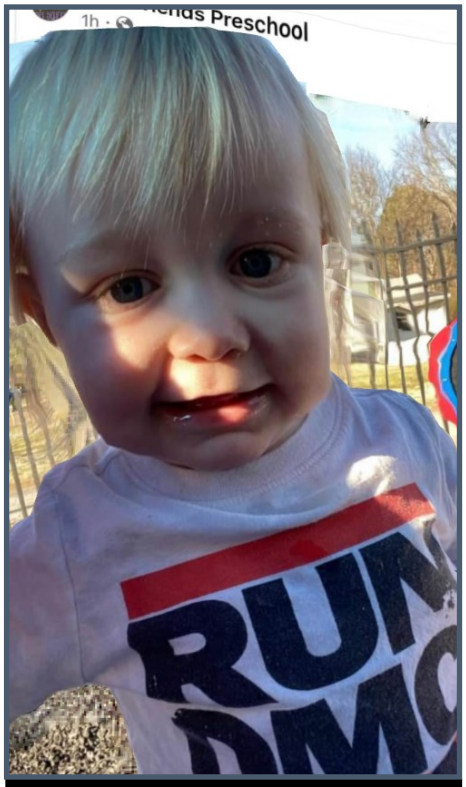
For 2021 the U.S. exported soybeans to the value of $26,476 million 48 percent more than in 2020 and 15 percent of the value all U.S. agricultural exports. □

How war in Ukraine could affect ag, food supply chain

March 1, 2022 at FeedStragegy.com by Ann Reus

Experts from Rabobank address issues concerning the grains and oilseeds, fertilizer and energy sectors. *Click here for full article* □

Turner
Grandson of Bart Smith
Sunbelt Rentals



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Andy
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Quality Incentive Company
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Rabo AgriFinance
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Reliable Poultry
Kendall Proctor (479) 601-2676
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ReNew Solar Solutions
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River Valley AgCredit
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River Valley Ingredients
Richard Stewart
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Silver Bullet Water Treatment
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SKOV
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Smith Creek, Inc.
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Southland Organics
Allen Reynolds
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Southwestern Sales Co.
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Space Ray
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Sunbelt Rentals, Inc.
Bart Smith
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Superior Plus Propane
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