

NEWS & VIEWS

USPOULTRY

U.S. POULTRY & EGG ASSOCIATION

November / December 2020

Get Ready for the 2021 IPPE Marketplace!

USPOULTRY and Foundation Approve \$350,000 in New Research Grants

USPOULTRY Foundation Allocates \$275,663 in Student Recruiting Funds

The All Feather Association serving the industry through education, research, communication and technical assistance.

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NEWS & VIEWS

NOVEMBER / DECEMBER 2020

News & Views is produced quarterly by the U.S. Poultry & Egg Association, the world's largest and most active poultry organization. USPOULTRY represents the entire industry as an "All Feather" Association. USPOULTRY is a nonprofit organization which represents its poultry and egg members through research, education, communication and technical assistance. Membership includes producers and processors of broilers, turkeys, ducks, eggs, and breeding stock, as well as allied companies. Formed in 1947, the Association has member companies nationwide and affiliations in 28 states. USPOULTRY also sponsors the International Poultry Expo.

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Giving Thanks!

It's that season of the year where we often reflect and give thanks for the many blessings we enjoy in our lives. Certainly, 2020 has been a difficult year. But "looking at the glass half-full," we can be thankful that 2020 is almost behind us, and we have the promise of a New Year ahead of us!

In my last column, the sting of cancelling the in-person IPPE 2021 was fresh with the pain still sharp. But, with a bit of time passing to lessen that sting, and getting away from the immediacy of the decision to reflect on a broader perspective, two grateful thoughts came to mind:

- I'm thankful for our Board leadership over the years, who maintained the fiscal discipline to provide an adequate reserve for our Association, such that we can continue to operate and serve our industry even with the disruption of our primary revenue stream through IPPE.
- I'm grateful to the donors of our 2012-2014 capital campaign for the U.S. Poultry & Egg Harold E. Ford Foundation. Because of the generosity of these donors several years ago, we were able to establish a fund corpus that will allow us to continue to fund critical student recruiting programs and research projects that otherwise would have been severely curtailed without IPPE 2021.

And, of course, I'm thankful to you—for your membership, your volunteerism, your participation, your leadership and your support in so many different ways. We'll continue to seek ways to enhance our service to the industry as we all recover from a difficult 2020!

John Starkey, PE
President
jstarkey@uspoultry.org



John Starkey, PE
President
USPOULTRY



Get Ready for the 2021 IPPE Marketplace!



The International Production & Processing Expo (IPPE) is excited to announce that IPPE Marketplace will take place Jan. 25-29, 2021. IPPE will continue to support the poultry, egg, meat and feed industries through its new, online IPPE Marketplace that will be available during IPPE's originally scheduled dates, Jan. 25-29, 2021, and beyond.

Through the IPPE Marketplace, more than 1,000 exhibitors will be connected with IPPE's

worldwide audience of 30,000-plus invited participants. The participants will be able to search for exhibitors using product categories and keywords and then review the descriptions and links provided by each matching exhibitor. Through digital personal guides, participants will be able to review all exhibitors and select those matching their individual needs.

The IPPE Marketplace will host live and on-demand, free and paid education programs during the week. These programs will include the International Poultry Scientific Forum, Pet Food Conference, Latin American Poultry Summit, Market Intelligence Forum, International Rendering Symposium, Feed Education Program and more.

Young leadership engagement and student recruitment will also be offered through 'IPPE's Linked In With Tomorrow's Leaders' program and the USPOULTRY Foundation

College Student Career Program, where hundreds of students will have an opportunity to interview for jobs and internships within the poultry and egg industry.

To round out the IPPE Marketplace, on-demand TECHTalks and the opportunity to view innovative products through the Innovation Station / New Product Showcase will be available. Participants will also have access to view the industry trade publications that are typically offered during the Expo through IPPE's website and the IPPE Marketplace.

"While we are disappointed that we will not be hosting an in-person event in 2021, we heard very clearly from our IPPE community of attendees and exhibitors that they still want to connect. More information about the exciting things you can expect during IPPE Marketplace week will be coming soon," said IPPE show management.



Attendee/Exhibitor Engagement



Free Education



Paid Education



USPOULTRY Foundation College Student Career Program



TECHTalks



Innovation Station/New Product Showcase



IPPE Linked In With Tomorrow's Leaders



Trade Publications

2021 Latin American Poultry Summit Program Announced

LA CUMBRE AVÍCOLA LATINOAMERICANA



The 2021 Latin American Poultry Summit will be held virtually Monday, Jan. 25, and Tuesday, Jan. 26 from 10 a.m. – 12:30 p.m. each day, with a Q&A session after each presentation. This year's theme, "Examining Key Growth Parameters for the Future," will be explored through an online platform, making it accessible for participants from all over North and South America. The Latin

American Poultry Summit is sponsored by the International Poultry Expo (IPE), part of the IPPE, WATT Global Media and the Asociación Latinoamericana de Avicultura (ALA).

The Latin American poultry market is experiencing disruptions in its supply chains and changes in consumer buyer behaviors. Poultry industry professionals need to know

how to respond and prepare to successfully react to these changes. The Latin American Poultry Summit will provide a learning platform that focuses on key market growth information including supply chain development, ingredient purchasing, animal health management and technological upgrades.

The program will be presented in Spanish only. No translation will be offered. The content will focus on a variety of areas for broilers and layers.

Registration will open Dec. 14 and will be complimentary for all participants. Please visit latinamericanpoultrysummit.org for program and registration information.

If you are interested in sponsorship opportunities, please contact Jeff Miller with WATT Global Media, jmiller@wattglobal.com.

IPPE Marketplace will take place Jan. 25-29, 2021. More information on the 2021 IPPE Marketplace week can be found at www.ippexpo.org.

2021 IPPE Marketplace Education Programs and Engagement

Sponsored by
USPOULTRY
U.S. POULTRY & EGG ASSOCIATION

EDUCATION

MONDAY, & TUESDAY

Jan. 25 & Jan. 26

Latin American Poultry Summit

Monday, Jan. 25, 10 a.m. – 12:30 p.m.

Tuesday, Jan. 26, 10 a.m. – 12:30 p.m.

Complimentary registration

Sponsored by USPOULTRY, WATT Global Media and the Latin American Poultry Association, the Latin American Poultry Summit will focus on leading technical topics covering live production and processing issues of greatest priority to Latin American poultry and egg producers and processors. **The program will be presented in Spanish only.** The content will focus on a variety of areas for broilers and layers. The summit will bring together key researchers from universities and leaders from genetics companies, suppliers, integrators and commercial companies to learn, discuss and network.

International Poultry Scientific Forum

Monday, Jan. 25, 8 a.m. – 4 p.m.

Tuesday, Jan. 26, 8 a.m. – 12 p.m.

\$100 registration fee

Sponsored by the Southern Poultry Science Society, the Southern Conference on Avian Diseases and USPOULTRY, the forum presents information on industry topics such as environmental management, nutrition, physiology, pathology, processing and products and avian diseases. Students with a valid student ID may register complimentary.

WEDNESDAY, Jan. 27

Poultry Market Intelligence Forum

9 – 11 a.m.

Complimentary registration

A leading industry economist and industry experts will provide insights on how the domestic and global economies, continuously improving performance, and regulatory issues impact the poultry and egg industries. They will identify challenges facing the industry and discuss how the U.S. and international poultry industries are positioned to move forward in 2021.

THURSDAY, Jan. 28

International Rendering Symposium

1 – 4 p.m.

\$50 registration fee

As “The Invisible Industry”, the rendering industry is vital to the sustainability of animal agriculture. Every year, renderers safely convert more than 50 billion pounds of excess animal products such as fat, bone, and used cooking oil into everyday products. The International Rendering Symposium, sponsored by the North American Renderers Association and USPOULTRY, focuses on educating attendees about rendering’s products, markets, safety and innovations.

ENGAGEMENT

TUESDAY, WEDNESDAY & THURSDAY

Jan. 26, Jan. 27 & Jan. 28

USPOULTRY Foundation College Student Career Program

The USPOULTRY Foundation College Student Career Program will be offered online during IPPE Marketplace week. The event connects hundreds of talented, bright college students seeking professions in the poultry industry with HR managers and recruiters. It is the most efficient and effective way for the poultry industry to find managers of the future and has been a vital part of many companies’ hiring process for nearly 50 years.

IPPE Marketplace Week

Jan. 25 - 29, 2021

IPPE Linked In With Tomorrow’s Leaders

For 2021, IPPE is offering an online “Linked In With Tomorrow’s Leaders” program designed to recognize leadership qualities in young professionals. The program will include participation in a LinkedIn™ group and online meet-ups with key industry leaders to further their leadership development. The program not only exposes these young leaders to the key industry leaders, it also allows them to attend valuable education programs to assist in their leadership development. The goal of the program is to invest in and engage young professionals who work for

companies directly involved in the production and processing of poultry and meat or the production of animal or poultry feed.

TECHTalks

The IPPE Marketplace will include a list of TECHTalks that are presentations by exhibiting companies and industry experts on operations and technical issues critical to all aspects of the meat, poultry and feed industries. The TECHTalks will address topics from the following areas: livestock/poultry production technology, food safety interventions and ingredients; recent analytical methods of pathogens; animal feed technology; application of sanitary design principles for meat & poultry processing equipment and facilities; packaging and processing technologies; information technology collection; and sustainability.

Innovation Station / New Product Showcase

The IPPE Marketplace will include videos about new products and innovations by exhibiting companies as part of the Innovation Station / New Product Showcase.

IPPE Marketplace Week / IPPE Website

Jan. 4 - 29, 2021

Trade Publications

IPPE will provide access to view the industry trade publications that are typically offered during IPPE through IPPE’s website and the IPPE Marketplace. These publications will be available for viewing beginning Jan. 4, 2021.

Please note that some publications may require that you register to access their content. In addition, some publications will not be available beginning Jan. 4 and will be added later. Please check back every week for new publications that have been added.

U.S. Poultry Industry Provides 2.1 Million Jobs; Economic Impact Up 15 Percent in Two Years



USPOULTRY, the National Chicken Council (NCC), National Turkey Federation (NTF) and United Egg Producers (UEP) have released an updated economic impact study that highlights the positive impact the poultry industry has on jobs, wages, and federal and state revenue in the United States. A dynamic and integral part of the national economy, the U.S. poultry industry provides 2,139,617 jobs, \$121.1 billion in wages, \$576.6 billion in economic activity and \$41.9 billion in government revenue.

Since the last study conducted in 2018, the poultry industry has created 154,833 additional jobs, and the economic impact has increased by more than 15 percent.

The study breaks down poultry into three subcategories: chicken, turkey and eggs. Key economic data from each are as follows:

- The chicken industry provides 1,613,881 jobs, \$91.3 billion in wages, \$433.2 billion

in economic activity and \$31.5 billion in government revenue.

- The turkey industry provides 387,346 jobs, \$22.0 billion in wages, \$103.4 billion in economic activity and \$7.6 billion in government revenue.
- The egg industry provides 119,080 jobs, \$6.7 billion in wages, \$34.7 billion in economic activity and \$2.5 billion in government revenue.

“We are pleased to continue providing this valuable tool across the industry that shows the positive economic impact the poultry industry has on our nation and communities,” said John Starkey, president of USPOULTRY.

The data is hosted on interactive websites that can be viewed collectively or by individual product, and then sorted nationally by state, congressional district, state house district or

state senate district, and county. For more information about the U.S. poultry industry’s economic impact, visit:

- www.poultryfeedsamerica.org
- www.chickenfeedsamerica.org
- www.turkeyfeedsamerica.org
- www.eggfeedamerica.org

The economic impact study was funded by USPOULTRY, and the study was conducted by John Dunham & Associates, based in New York City. The study was updated using the most current methodology available and uses data from 2020. Additional information on the study’s methodology and model description can be found on the PoultryFeedsAmerica.org website.

Injuries and Illnesses in Poultry Processing Fall Below All Manufacturing for First Time

The incidence of occupational injuries and illnesses within the poultry sector's slaughter and processing workforce has fallen below all manufacturing for the first time since the Department of Labor's Bureau of Labor Statistics (BLS) began recording injuries and illnesses information in 1994. The total recordable poultry processing illness and injury rate for 2019 was 3.2 cases per 100 full-time workers annually, down from 3.5 in 2018. The poultry industry's rate of 3.2 was below the rate of 5.1 for similar agricultural industries in terms of injuries per 100 full-time workers and lower than the rate of 4.0 for the entire food manufacturing sector and all of manufacturing at 3.3.

The incidence of occupational injuries and illnesses within the poultry sector's slaughter and processing workforce has fallen by 86 percent over the last 25 years and continues to decline according to the 2019 Injury and Illness Report recently released by the BLS. Poultry processing's 2019 rate of 3.2, and its continual decline, demonstrates the vast advancements the industry has made in improving safety for its workforce.

"Employee safety has been and will always be a priority for the poultry industry. The industry is continuing to focus its efforts on the prevention of workplace injuries and illnesses, especially musculoskeletal disorders such as carpal tunnel syndrome, by acknowledging the benefit of implementing ergonomics and medical intervention principles while continually implementing new technology and automation in the workplace. The past two decades have shown a noteworthy decrease in the numbers and rates of injury and illnesses. However, the poultry industry remains committed to pursuing new and resourceful ways to safeguard our workforce," said the Joint Industry Safety and Health Council in a statement regarding the report's release.

The Joint Industry Safety and Health Council consists of members from USPOULTRY, NCC



and NTF. Collectively, the three organizations represent companies that produce 95 percent of the nation's poultry products and directly employ more than 350,000 workers.

"Our employees are our most important asset, and their safety is of utmost importance," said USPOULTRY, NCC and NTF in response to the report's release. "The poultry industry has continually focused its energies on the prevention of workplace injuries and illnesses. This most recent data acknowledges the excellent safety performance achievements the poultry industry has accomplished. Surpassing the 'all of manufacturing' category has been one of our milestones that we are proud to say has been accomplished. We will continue to seek new milestones to ensure the safety and well-being of our employees."

Last year, the poultry industry and the U.S. Department of Labor's Occupational Safety & Health Administration (OSHA) announced an alliance to share information, guidance and access to training resources that will help further improve the significant gains made in poultry worker safety. It is the goal of the industry to continue to drive these rates

down and help promote the overall health and safety of employees and team members.

Currently, the National Institute for Occupational Safety and Health (NIOSH) National Occupational Research Agenda for manufacturing and OSHA are studying the manufacturing sector's response to COVID-19. The study will review the use of risk assessment analysis of social distancing practices with the goal of researching the effectiveness of implemented controls. USPOULTRY is providing input on behalf of the poultry industry.



Comprehensive Research Program

USPOULTRY and Foundation Approve \$350,000 in New Research Grants

USPOULTRY and the USPOULTRY Foundation have approved \$350,000 for five new research grants at four institutions through the comprehensive research program. The research funding was approved by the boards of directors of both organizations, based on recommendations from the Foundation Research Advisory Committee. The committee evaluates research proposals to determine their value to the industry and then makes recommendations to the boards for funding. Committee members are professional specialists from different segments of the poultry and egg industry who represent a variety of disciplines.

The Association's comprehensive research program dates back to the early 1960s when funds were first approved for poultry disease research. It gradually grew into an all-inclusive program incorporating all phases of poultry and egg production and processing. Since the inception of the research program, USPOULTRY has reinvested more than \$33 million dollars into the industry in the form of research grants. More than 50 universities and federal and state facilities have received grants over the years.

"Research is, and continues to be, a critical component of USPOULTRY's and the Foundation's service to the poultry industry. The Foundation Research Advisory Committee members volunteer many hours to review and evaluate research proposals before making recommendations for funding. We sincerely value and appreciate their work," said Greg Hinton, Rose Acre Farms, and USPOULTRY chairman.

The research grants for each institution include:

Role of Early Incubation Temperature Variation in the Development of the Wooden Breast Myopathy in Broiler Chickens

Auburn University (research grant made possible in part by an endowing Foundation gift from Koch Foods)

Assessing the Impact of Feed Supplements on Selection of Avian Pathogenic Escherichia coli (APEC)

University of Georgia (research grant made possible in part by an endowing Foundation gift from MarJac Poultry)

Role of Ratios of Limestone Particle Size and Phytase to Support Late Lay in Single Cycled Laying Hens – Focus on Eggshell Quality

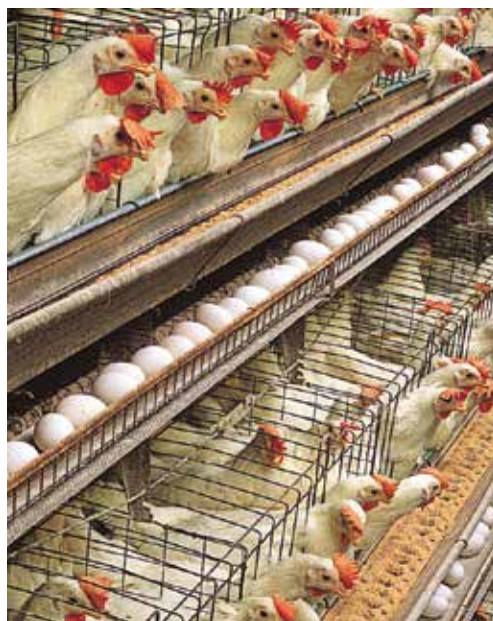
Mississippi State University (research grant made possible in part by an endowing Foundation gift from Centurion Poultry)

Enhancing Immunogenicity and Protective Efficacy of Recombinant Infectious Laryngotracheitis (ILT) Vaccines in Broiler Chickens

North Carolina State University (research grant made possible in part by an endowing Foundation gift from Mountaire Corporation)

High-Resolution Salmonella Serotyping to Improve Surveillance in Turkeys

University of Georgia (research grant made possible in part by an endowing Foundation gift from Cargill)



Research Results

Funded by USPOULTRY and the USPOULTRY Foundation

USPOULTRY and the USPOULTRY Foundation announce the completion of four funded research projects. The projects are part of the Association's extensive research program encompassing all phases of poultry and egg production and processing. A summary of the completed projects can be found on the following four pages. Information on other Association research may be obtained by going to USPOULTRY's website, www.uspoultry.org.

Researchers Evaluate Novel Method to Vaccinate for Infectious Bronchitis Viruses

Project #709: Infectious Bronchitis Virus Spike Protein-Pseudotyped Virus Particles for Vaccine Applications

(Dr. Brian Jordan and Dr. Mark Jackwood, University of Georgia, Athens, Georgia)

Infectious bronchitis virus (IBV) is an economically important respiratory virus of chickens. Control of the disease caused by IBV is achieved through vaccination with live attenuated virus strains. However, many serotypes of IBV exist, and there is minimal cross protection between variants. Disease surveillance and vaccine development is thus a constant, ongoing effort to keep up with new and emerging IBV strains. To date, there are dozens of identified serotypes and hundreds of variants circulating in commercial poultry world-wide. Current control strategies rely on isolating a new IBV variant, determining the serotype through correlation with the spike protein genotype, taking the isolated virus and passaging it through embryonated eggs until the virus has become adapted to embryos and therefore less pathogenic to live chickens (typically over 100 passages), performing efficacy studies, and finally, licensing through governmental agencies for use in commercial poultry. This process often takes more than two years to complete, wherein during that time the virus is uncontrolled in poultry flocks causing significant disease and economic losses.

The goal of this research project was to evaluate the potential for pseudotyped vesicular stomatitis virus (VSV) particles carrying IBV spike proteins on their surface to be used as a vaccine for emerging variant IBVs.

The objective was to determine if a novel vaccine production method could be used to shorten the variant-to-vaccine timeline and be efficacious at protection against the new IBVs. Since VSV is non-replicating and would therefore act like a killed vaccine, the strategy was to vaccinate broiler chickens with GA08 IBV spike pseudotyped particles alone or in combination with a live Mass-type IBV vaccine and then challenge with pathogenic GA08 IBV to assess the level of protection developed from vaccination.

The GA08 pseudotyped VSV (GA08-pVSV) particles were created in the laboratory. Two initial studies using an inoculation dose of 16 or 32 HA units were given to specific pathogen free (SPF) chicks via intraocular/intranasal routes or via intramuscular (IM) injection. The chicks were then bled to measure antibody levels. The chicks given 32 HA units of GA08-pVSV via the IM injection route showed a small antibody response, but production of GA08-pVSV at 32 HA units was not continually achievable in the laboratory, so an inoculation dose of 16 HA units and IM route was chosen to proceed with the full vaccine challenge experiment.

When assessing all data, it is apparent that the SPF chicks did not immunologically respond to the GA08-pVSV particles. If a higher HA unit dose of vaccine could have been given, we may have seen a better response, but this was not achievable due to the limited scalability in the GA08-pVSV production process. Furthermore, preliminary studies showed that the best (albeit small) response to these particles came when applied via IM injection with adjuvant. This inoculation route would not be feasible for the broiler industry, for which this vaccine was targeted, also making this vaccine candidate non-viable.

In the vaccine challenge experiment, multiple groups were included to encompass several vaccine combinations. The GA08-pVSV particles were either given via in-ovo injection, by IM injection at 1 day of age, by IM injection at 14 days of age, or a combination of these time points with or without a live Mass-type IBV vaccine. All vaccinated groups (including the control group) were challenged at 28 days of age and were assessed 5 days post challenge for clinical signs, viral load and antibody development. The group that only received GA08-pVSV had higher clinical sign scores, higher viral loads and no antibodies detected post challenge. There was no statistical difference between any of the other groups, all of which received a live Mass-type IBV vaccine. This indicates that any protection seen in any of the groups was due to the Mass-type IBV and not from the GA08-pVSV.

Data showed that the SPF chicks did not immunologically respond to the GA08-pVSV particles. If a higher hemagglutination unit dose of vaccine could have been given, there may have seen a better response. However, this was not achievable due to the limited scalability in the GA08-pVSV production process in the lab. Furthermore, preliminary studies showed that the best (albeit small) response to these particles came when applied via IM injection with adjuvant. This inoculation route would not be feasible for the broiler industry, for which this vaccine was targeted, also making this vaccine candidate non-viable.

The research was made possible in part by an endowing Foundation gift from Fieldale Farms.

Research Results (cont'd)

Funded by USPOULTRY and the USPOULTRY Foundation

Researchers Investigate Broiler Response to Phytase Enzymes

Project #F082: Response of Broilers Fed Phytase Enzymes of Different Optimal pH Ranges Alone or in Combination

(Dr. Kelley Wamsley, Mississippi State University, Mississippi State, Mississippi)

Phytase is an exogenous enzyme that is commonly incorporated into commercial poultry diets to increase the digestibility of phytate phosphorus. This is significant because a large majority of the ingredients used for poultry feed are plant-derived and contain phytate. Phytate hinders the nutritional potential of diets and bird growth performance, leading to unreached maximal economic gain. Phytase inclusion in diets provide broiler production advantages, such as improved growth performance and better nutrient digestibility. Due to the expense associated with feed, it is common for poultry nutritionists to formulate diets on a least-cost basis to maximize profit. However, lower priced ingredients typically contain higher amounts of antinutrients, like phytate.

The objective of this research project was to determine the effects of feeding combinations of phytases with varying optimal pH ranges. The researchers theorized that if combinations of different phytases are more effective than singular use, the nutritive quality of feedstuffs would be enhanced; thereby, improving broiler production, lowering feed costs and reducing environmental excretion of phosphorus. Two experiments were conducted. In experiment 1, broilers were reared in raised wire cages from 0-14 days to investigate the potential synergy of three different phytase enzymes of varying biochemical properties when fed alone or in combination with low phytase activities (120 or 240 FTU/kg). Data obtained demonstrated a potential synergy with the supplementation of two phytases combined at a higher phytase activity level (240 FTU/kg), as identified from ileal IP6 lower ester concentration, increased



digestibility (calcium, phosphorus, and select amino acids) and tibia ash (indicating greater phytate degradation). In experiment 2, the two higher performing phytases from experiment 1 were used to address limitations recognized in experiment 1, including: 1) utilizing a broader and more practical range of phytase activity (250 or 1500 FTU/kg); 2) implementing three diets varying in calcium and available phosphorus; and 3) employing an entire grow-out of broilers within experimental floor-pen facilities.

These data demonstrated that feeding diets lowest in calcium and available phosphorus along with 1500 FTU/kg of a single phytase resulted in improved broiler performance, tibia ash (mg/chick and concentration of select minerals) and nutrient digestibility (calcium, phosphorus and select amino acids). This strategy also demonstrated improved thigh weight at processing and indicated greater phytate degradation. Additionally, there was some indication of synergy for the use of combined phytase at 250 FTU/kg within

diets of medium calcium and available phosphorus levels (relative to reduced nutrient diets alone); however, performance was not maximized.

Overall, data do not indicate that feeding multiple phytase enzymes will contribute to significant improvements for the commercial broiler industry; however, these data do suggest that more attention towards calcium and available phosphorus ratios can further the efficacy of phytases. Further research on multiple enzyme use in broiler diets is warranted and could provide valuable economic and environmental insight on the strategic use of exogenous enzymes for the commercial poultry industry.

The research was made possible in part by an endowing Foundation gift from Peco Foods.

Research Results (cont'd)

Funded by USPOULTRY and the USPOULTRY Foundation

Researchers Investigate Biological Control Agents to Decrease House Fly Populations

Project #F077: Improved Fly Control on Poultry Facilities with Microbial Products

(Dr. Erika Machtinger, Department of Entomology, Pennsylvania State University, University Park, Pennsylvania)

Control of house flies (*Musca domestica*) poses a significant challenge to poultry producers, especially those involved in managing layer facilities. Egg production occurs in facilities where the accumulation of manure in an enclosed space creates the perfect development habitat for fostering large numbers of flies. Historically, pest flies have been controlled with chemical insecticides. However, regulatory restrictions, house fly resistance to current active ingredients in commercial pesticides, and the lack of options labeled for pest control in poultry facilities make management of house fly populations difficult.

To control house flies, the poultry industry is estimated to spend \$20 million dollars annually on pesticides alone. This estimate does not include the cost of animal loss due to house fly vectored pathogens causing disease, the cost of labor for pesticide application, or litigation that can be taken by residents living near production facilities due to increased fly numbers affecting their property values.

One potential option to control pest flies is the integration of biological control agents into a layer facilities' integrated pest management (IPM) program. Many natural antagonists of the house fly are found within the environment of the manure pit. Augmentative releases of these antagonists and introduction of pathogenic organisms can help lower house fly populations to manageable levels. The most promising of these biological control agents on a commercial level are parasitoid wasps and the entomopathogenic fungi *Beauveria bassiana*. Parasitoid wasps are commercially



available and commonly released into poultry systems as a form of biological control, but more research needs to be done to determine which species or combination thereof would be the most effective in different geographic locations. The fungi, *B. bassiana*, has been widely studied as a form of biological control for house flies in layer facilities as well but has not been widely adopted by the industry. Further research into improving its effectiveness and ease of use could change this trend.

The three objectives of this research project were: (1) to collect new fungal isolates from flies in poultry facilities and screen them to identify strains with fast kill times, (2) to test the most promising strains and subject them to selection for further improvements in kill times, and (3) to ensure their compatibility with the most important natural enemies of flies (three species of parasitic wasps and the beetle predator *Carcinops pumilio*).

Objective 1 results included the collection of five new isolates of *B. bassiana* that had mean survival times under eight days, an

improvement from currently marketed *B. bassiana* products. For objective 2, researchers identified which strain was consistently the most virulent and produced the highest numbers of conidia on cadavers in fly-to-fly passages. Selection for faster-killing strains shortened the average time until death by three days, from 7.6 to 4.7 days, after nine generations of selection. Final analysis of the selected strains was postponed when the USDA laboratory was closed due to the COVID-19 pandemic. For objective 3, *Spalangia endius* was the most resilient to the *B. bassiana* applications, whereas *Spalangia cameroni* and *Muscidifurax raptor* had decreased survival when *B. bassiana* was applied.

Overall, the *B. bassiana* strains isolated from house flies killed greater numbers of flies than the negative control. In parasitoids, all strains had a more limited effect than was observed in the house flies, except for in *S. endius*, in which there was no effect. The susceptibility of these house flies to the treatments and the lack thereof in all parasitoid species is a good indicator of the usefulness of field collected strains of *B. bassiana* and their use as a biological control tool. Given that the strains each demonstrated different traits in their infection of house flies, further research should be done to see the extent of each of these traits and if they could be useful for biological control.

The research was made possible in part by an endowing Foundation gift from MPS Egg Farms.



Research Results (cont'd)

Funded by USPOULTRY and the USPOULTRY Foundation

Researchers Investigate Novel Method for Enumeration and Characterization of Coccidia in Poultry

Project #718: A Novel Method for Enumeration and Speciation of *Eimeria* species of Coccidian Protozoa by Flow Cytometry

(Dr. Rocio Crespo, Department of Population Health and Pathobiology, North Carolina State University, Raleigh, N.C.)

An accurate, speedy and reliable diagnosis of *Eimeria* at the species level is both challenging and necessary. Presently, there are many approaches to distinguish between species of these protozoa, including oocyst morphology, pre-patent period and site of infection. However, these methods are labor intensive, time consuming and unreliable, particularly in cases of mixed *Eimeria* infection. Furthermore, these methods do not easily lend themselves to high throughput applications. Numerous molecular approaches have been tried and tested with some degree of success. Quantitative polymerase chain reaction (qPCR) assays, capable of speciating and enumerating *Eimeria*, have been validated. But, due to the relatively high reagent cost their practical utility in field applications and laboratory settings, are questionable. Flow cytometry (FCM) is an automated method for measuring features of single cells in suspension. Many parameters may be assessed simultaneously and objectively at high speed. FCM has the potential to be an excellent diagnostic tool for speciation and enumeration of *Eimeria* species by exploiting Eimerian oocyst morphology (size and granularity).

The objective of this project was to develop a non-antibody flow cytometry-based diagnostic method for simultaneous enumeration and speciation of coccidian protozoa. To achieve this goal, the project was divided into three specific objectives: (1) characterize each of the



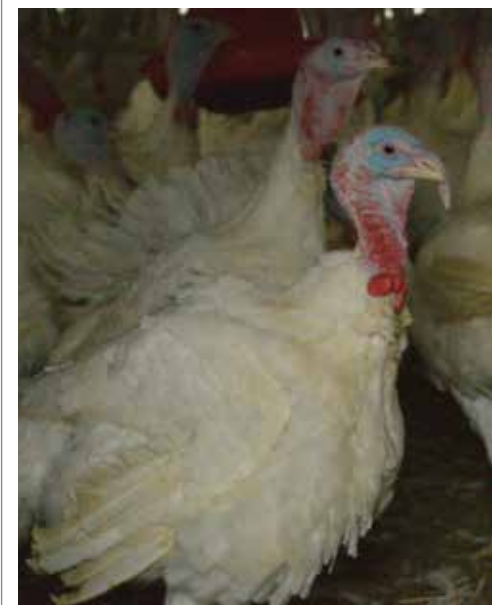
Eimeria populations at the species level, (2) define distinct population coordinates of each *Eimeria* sp. in order to speciate and quantitate mixed cultures of *Eimeria*, and (3) evaluate the effectiveness of the method with field samples.

Researchers were able to characterize the four *Eimeria* species (*E. acervulina*, *E. mitis*, *E. maxima*, and *E. tenella*) on a BD LSRII flow cytometer analyzer by using simple light scatter data plotting. No special staining or antibody labeling procedures were necessary towards resolving these populations. Sorting of mixed populations was successful for the four *Eimeria* sp. using the MoFlo-XDP cell sorter. The sorted populations aligned with the LSRII data. Purity of these populations was validated by PCR. For enumeration of oocysts, a vaccine and fecal/litter samples were used from poultry flocks mixed with a known number of counting beans. Speciation and quantification of oocysts was performed using the flow cytometer unit. Manual enumeration and speciation by flotation and PCR analysis

was performed to validate the counts as well as the purity of each *Eimeria* sp. identified. Although, additional field samples need to be tested and analyzed, preliminary results showed the method to be reliable for counting and speciating four common *Eimeria* sp. of chickens.

Flow cytometry application can provide a useful, accurate, rapid and automated diagnostic method for the simultaneous enumeration and characterization of coccidia in poultry. In the long term, this research may lead to the development of other industry assays, such as a more accurate identification of shedding patterns of specific *Eimeria* sp., differentiation between sporulated and non-sporulated oocysts in the samples, and even recognition of *Eimeria* strains in vaccine preparations.

The research was made possible in part by an endowing Foundation gift from Perdue Farms.



Venable Named 2021 Chair of the IAEE Southeastern Chapter



Venable presented an engraved gavel to Kristina Unger, PPA/Georgia Girl Management and outgoing IAEE Southeastern Chapter chair

USPOULTRY Vice President of Communications Gwen Venable, CEM, has been named 2021 chair of the International Association of Exhibitions and Events (IAEE) Southeastern Chapter. Venable was introduced as incoming chair during the IAEE Southeastern Chapter's holiday luncheon, held at the Georgia Aquarium, on Dec. 3 in Atlanta. Appropriate safety precautions and protocols were in place at the luncheon, including face coverings, gloves, sanitizing and six-foot distancing.

"As a long-time member of the Atlanta hospitality community, we are excited to have Gwen continue to serve the IAEE Southeastern Chapter, now in the chair role," said USPOULTRY President John Starkey.

Venable has served on the IAEE Southeastern Chapter's board of directors since 2012 and joined the Chapter's executive team in 2018. In addition to participating on the executive team, she has served as chair of the IAEE Southeastern Classic education program for the last two years, spearheaded the Chapter's Technology Exchange education program for the past five years, and participated in various charity events held by the Chapter.



Venable holds a Certified in Exhibition Management® (CEM) designation, which is a globally recognized designation that demonstrates the highest professional standard throughout the exhibitions and events management arena. In addition to her responsibilities for USPOULTRY, Venable oversees the communications, public relations and marketing associated with USPOULTRY's International Poultry Expo, part of the IPPE, held annually in Atlanta. Sponsored by USPOULTRY, the American Feed Industry Association and the North American Meat Institute, IPPE is one of the 30 largest trade shows in the United States and showcases the most current technology, research, processes and products that the global animal food, meat and poultry industries have to offer.

With nearly 1,500 active volunteer members, the IAEE Southeastern Chapter serves North Carolina, South Carolina, Georgia, Florida, Alabama and Mississippi. The Chapter's mission is to deliver relevant and highly focused services and activities designed to broaden the knowledge base, professional development and bottom lines of its members. Recognizing that face-to-face networking is the backbone of the industry, the Southeastern Chapter hosts meetings or other events almost every month of the year.



Venable and USPOULTRY President John Starkey

Regulatory Implications of a New Administration

After four years with an administration that made good on a commitment to reduce and rollback regulatory pressures on industry and businesses, early signals coming from a new administration indicate the expansion of regulatory oversight is almost certain to ramp up. Messaging from the presumptive incoming administration implies one of its main priorities will be to reverse the previous administration's deregulatory agenda.

The costs associated with regulations are significant. While these costs are immediately shouldered by industry, ultimately, they are passed on to individuals. This fact was substantiated in a June 29, 2020 article in *Forbes* magazine when it pointed out, "If one assumed that all costs of federal regulation and intervention flowed all the way down to households, U.S. households would 'pay' \$14,455 annually on average in a regulatory hidden tax... That means that an average American household 'spends' more on embedded regulation than on health care, food, transportation, entertainment, apparel, services or savings." For industry and companies to continue operating, they must remain economically viable. This all but dictates they have no other option but to pass the financial burden associated with expanded regulations on to the consumer, making the argument pointed out in the *Forbes* article a fact rather than an assumption.

For months, there has been speculation about the ramifications of a potential change in administrations regarding the regulatory impact it will have on the poultry and egg industries and subsequently, American households. With the picture of a potential administration change clearer, many have been taking stock of the issues and the likelihood of a rollback from the deregulatory initiatives that took place during the Trump administration.

In some cases, a simple signature can reverse an executive order. This is highly likely to occur with a previous executive order that required

any new incremental costs associated with new regulations to be offset by eliminating existing costs associated with at least two prior regulations. Likewise, any regulation in the pipeline not yet finalized can be pulled from the process. Even finalized regulations can be nullified through the "Congressional Review Act" (CRA) with the passing of a congressional joint resolution that rejects the Rule if it was finalized within 60 days of Congress' final adjournment. Rules finalized before the "60-day reach back" window fall outside the authority of the CRA.

The animal agriculture industry saw this scenario occur when the Obama administration repealed a previous administration's exemption for reporting the airborne emission of ammonia generated on farms from the natural breakdown of manure. The EPA at that time recognized this reporting requirement, required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), was not meaningful, was never meant to cover agricultural operations and did nothing to support the responsibilities of the National Response Commission. Fortunately, Congress restored this reporting exemption in 2018 by passing the Fair Agricultural Reporting Method Act (FARM Act). However, at risk with an administrative change in 2021 is a nearly identical reporting exemption EPA finalized in June of 2019 for reporting requirements, outlined in Section 304 of the Emergency Planning and Community Right-to-Know Act (EPCRA). However, this would require EPA to institute a full rulemaking process that gives the regulated public an opportunity to comment since it is beyond the 60-day reach back window.

Another notable regulation that might be vulnerable is the "Navigable Waters Protection Rule" (NWPR). The NWPR, finalized on April 21, 2020, defines those waters that are jurisdictional under the Clean Water Act. It was finalized in response to the "Clean Water Rule," a regulation passed by the prior administration

that was widely seen as a regulatory over-reach because it defined virtually every water feature, drainage ditch and low point on the landscape jurisdictional under the Clean Water Act. Again, although the "reach back" window for the NWPR is closed, it could be repealed through a full rule making process. The NWPR is further jeopardized by several lawsuits challenging its legality. If any one of those lawsuits invalidate the NWPR, the Obama administration's "Clean Water Rule" could be reinstated. This because, while the "Clean Water Rule" was found to be unlawful, the court did not vacate it. Instead, the court remanded the rule back to EPA for revision. This could return millions of property owners to a state of confusion over knowing what they can do on their property.



These are only a few examples. The same *Forbes* article mentioned above, noted that of the 3,752 regulatory actions in the current pipeline, 689 are deregulatory. While the process and complications associated with an effort to undo past and incomplete deregulatory initiatives vary, all are potential targets of an administration with a different regulatory ideology. Instinctively, and rightly so, there is much to be concerned about over the regulatory implications of a new administration.

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USPOULTRY Industry Education Programs Continue During Pandemic: **Food Safety and Meat Quality Focus of Virtual 2020 Poultry Processor Workshop**



Dr. Marcos Sánchez-Plata
Texas Tech University

Keeping with the commitment to offering educational opportunities to the poultry industry despite abnormal circumstances, USPOULTRY held its 2020 Poultry Processor Workshop in a shortened, virtual format.

Dr. Marcos Sánchez-Plata, associate professor of global food security at Texas Tech University, provided a comparison of chemical versus non-chemical interventions for *Campylobacter* in processing plants. He discussed the importance of addressing these issues in processing for the benefit of general public health.

"Why do we need to do this?" Sánchez-Plata questioned listeners. "Because of consumer issues related to food handling and food safety. Food safety education has come a long way, but consumers still have misconceptions when it comes to things as simple as washing poultry. Reducing the number of infections caused by *Campylobacter* species transmitted through food is one of the main objectives for the health sector in the next 10 years. Being a part of the solution by implementing effective intervention systems allows us to be

part of building a healthier population, as well as helping us meet the poultry performance standards set by the U.S. Department of Agriculture Food Safety and Inspection Service (USDA-FSIS)," he stated.

Dr. Dianna Bourassa, assistant professor and extension specialist of poultry science at Auburn University, focused on optimizing meat quality. She described the various components that affect meat quality and how to avoid them during processing. Throughout the presentation, she also fostered a discussion on industry continuity that had arisen during Dr. Sanchez-Plata's presentation.

"I appreciate how Dr. Sánchez-Plata pointed out that the farm and the processing plants are not separate when it comes to meat quality and safety. The processes on the farm make just as much difference as the processes at the plant, as decisions in handling at either stage will have an impact. Meat quality is affected at every single step throughout production and processing," Bourassa commented.

Juanfra DeVillena, director of quality assurance and food safety at Wayne Farms LLC, gave a

presentation on the "Effects of Line Speed Waivers During a Pandemic." He provided a brief industry history of recent changes in line speed allowances and discussed the importance of food safety and employee safety.

"Food safety, employee safety and animal welfare are all equally important. In order to take advantage of the ability to raise line speed, statistical validation should be used to show everything is under control. You must pay attention to every detail, because increasing line speed is not as simple as an on/off switch," emphasized DeVillena.

Commenting on the speakers that participated in the program, Rafael Rivera, manager of food safety and production programs for USPOULTRY, remarked, "In the spirit of our mission at USPOULTRY to provide scientific and technical services and education to our members, we are pleased to provide these examples of industry leaders to you today. The opportunity to learn from their experience serves to further the education and success of the industry as a whole."



Juanfra DeVillena
Wayne Farms LLC

Recruiting for Future Leaders in Uncertain Times

College students and young future leaders must be feeling lost in these times of employment uncertainty. Stress and anxiety about whether they will secure a career when they graduate is heightened. While many companies are putting employees on furlough, layoffs, and have halted hiring, we want to help assure students that the U.S. poultry industry is thriving, sustainable, and is still recruiting young talent to ensure the future of the industry. To assist in these efforts, USPOULTRY and the USPOULTRY Foundation are committed to continuing the College Student Career Program, even in these uncertain times. We understand that this program plays a vital role in many of our industry members' ongoing recruiting efforts, and we have no doubt that a virtual program is necessary to assist the industry in recruiting future leaders.

The Program connects hundreds of talented, bright college students seeking professions in the poultry industry with HR managers and recruiters. It is the most efficient and effective way for the poultry industry to find managers of the future and has been a vital part of many companies' hiring process for more than 50 years. It is one of the

largest career events of its kind for students seeking professions in the industry that allows producer member companies of USPOULTRY and our IPPE partners (the American Feed Industry Association and the North American Meat Institute) and allied companies to interview top students, in a variety of majors, from several universities.

The three-day program is 100% funded by the USPOULTRY Foundation. Students graduating between Sept. 1, 2020 and Dec. 31, 2021 are eligible to interview for full-time positions. Students seeking internships may also participate. Eligible students include current sophomores through graduate students from two and four-year colleges and universities, majoring in:

- Accounting
- Ag Economics
- Business
- Communications
- Engineering
- Food Science
- Human Resources
- Industrial Technology
- Information Technology
- Poultry and Animal Science

- Sales and Marketing
- Veterinary Medicine
- ...other related studies

Companies sign up online to participate. The companies then receive the electronic resume database to begin their search for qualified students. Held virtually during IPPE Marketplace week, one-on-one interview sessions will be held Jan. 26-28, 2021 on Tuesday afternoon, all day Wednesday and Thursday until noon.

Don't miss this opportunity to assist in your young leader recruiting efforts. Sign up today at <https://www.ippexpo.org/cscsp/>.

Barbara Jenkins
Vice President, Education & Student Programs and Executive Director,
USPOULTRY Foundation
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USPOULTRY Foundation Allocates \$275,663 in Student Recruiting Grants

The USPOULTRY Foundation awarded student recruiting grants totaling more than \$275,663 to six U.S. universities with poultry science departments and 20 other institutions with industry-related programs. The Foundation provides annual recruiting and retention funds to colleges and universities to attract students to their poultry programs. The grants were made possible in part by gifts to the USPOULTRY Foundation from companies, individuals and families, in addition to funds earned over the years at the International Poultry Expo, part of the IPPE. The six poultry science departments receiving the grants are as follows.

University	Grant Amount	Grant Made Possible in Part By:
Auburn University	\$25,150	Ingram Farms
Mississippi State University	\$27,336	Sanderson Farms Inc.
North Carolina State University	\$31,872	Stanley & Dorothy Frank Family Foundation
Texas A&M University	\$36,954	Tyson Foods Inc.
University of Arkansas	\$30,396	Monty & Margot Henderson Recruiting Fund
University of Georgia	\$23,292	Leland Bagwell Education and Innovation Fund

The 20 other institutions with industry-related programs receiving recruiting and retention grants under the Foundation's Industry Education Recruitment Funding Program are as follows.

Institution	Grant Amount	Grant Made Possible in Part By:
Abraham Baldwin Agricultural College, Ga.	\$ 2,500	Don Dalton Student Recruiting Fund
California State University, Fresno	\$ 4,600	Agri Stats, Inc.
Eastern Oklahoma State College	\$ 2,218	Simmons Foods Inc.
Iowa State University	\$ 4,620	West Liberty Foods
James Sprunt Community College, N.C.	\$ 7,000	Case Farms
Louisiana State University	\$ 4,600	Sanderson Farms Inc.
Middle Tennessee State	\$10,000	Pilgrim's
North Carolina A&T	\$ 1,670	Stanley & Dorothy Frank Family Foundation
Ohio State University	\$ 4,620	MPS Egg Farms
Pennsylvania State University	\$ 5,300	Perdue Farms
Purdue University, Ind.	\$ 6,995	Jay Houchin Family
Sam Houston State University, Texas	\$ 7,000	Jerry and Cherie Moye
Stephen F. Austin State University, Texas	\$ 4,600	Frost PLLC
Tennessee Technological University	\$ 2,540	Hubbard Farms Charitable Foundation
University of Arkansas - Pine Bluff	\$ 4,600	George's Inc.
University of Delaware	\$ 4,600	Valley Proteins
University of Florida	\$ 4,600	Claxton Poultry
University of Maryland	\$ 4,600	Perdue Farms
University of North Georgia	\$ 7,000	Leland Bagwell Education and Innovation Fund
Wilkes Community College, N.C.	\$ 7,000	Case Farms

University of Maryland Awarded \$4,600 USPOULTRY Foundation Student Recruiting Grant

The USPOULTRY Foundation recently awarded a \$4,600 student recruiting grant to the University of Maryland. The grant was made possible in part by an endowing Foundation gift from Perdue Farms. The check was presented by Mike Levensgood, vice president, chief animal care officer and farmer relationship advocate at Perdue Farms and vice chairman of the USPOULTRY board of directors, to Dr. Shawna Weimer, assistant professor at the Department of Animal and Avian Sciences.

The grant will be used to support the university's college of agriculture and natural resources, which offers various agricultural degrees, many of which include poultry-focused classes and learning experiences. Funds will be used to help recruit students to the program, exposing students to the various career opportunities in the agriculture sector.

The USPOULTRY Foundation board recently approved student recruiting grants totaling \$275,663 to 26 colleges and universities across

the United States with a poultry science department or industry-related degree program. The USPOULTRY Foundation provides annual recruiting funds to colleges and universities to attract students to their poultry programs. The grants are made possible by gifts to the Foundation from companies, individuals and families, in addition to funds earned over the years at the International Poultry Expo, part of the IPPE.



Mike Levensgood (far right), Perdue Farms, presents the student recruiting check to Dr. Shawna Weimer (far left), University of Maryland. With them are several of Dr. Weimer's students.

Membership Renewal Is Here!

It is time to renew your USPOULTRY membership. Your 2020 membership expires on Dec. 31, and you will not want to lose access to the benefits and resources of the world's largest and most active poultry organization.

USPOULTRY has built a strong network of members, volunteers, industry partners and state affiliates, together with a staff with expertise in a variety of areas, that complement the Association's mission and vision. USPOULTRY has harnessed the power of that network to accomplish a lot in 2020 on behalf of the industry and our members. Looking ahead to 2021, there is so much more that USPOULTRY is going to achieve to help your company and our industry in the areas of improved operations, food safety, sustainability, increased efficiency and profitability.

We hope that you will take this time to renew your membership and remain a part of a dynamic and effective organization dedicated to the improvement and advancement of the poultry and egg industry.

It could not be easier. Complete the renewal form at www.uspoultry.org/membership. Don't miss out. Act today!

If you have questions about your USPOULTRY membership, please contact Kris Carroll at kcarroll@uspoultry.org.

Kris Carroll
Marketing and Membership Manager
kcarroll@uspoultry.org



Feed Mill Management Seminar
March 17-18, Nashville, Tennessee
DoubleTree by Hilton Downtown

Human Resources Seminar
April 19-21, Destin, Florida
Hilton Sandestin Beach Golf Resort & Spa

Poultry Processor Workshop
May 12-13, Nashville, Tennessee
DoubleTree by Hilton Downtown

Financial Management Seminar
June 2021
TBD

Hatchery Breeder Clinic
July 7-8, Nashville, Tennessee
DoubleTree by Hilton Downtown

National Safety Conference for the Poultry Industry
August 16-18, Destin, Florida
Hilton Sandestin Beach Golf Resort & Spa

Women's Leadership Conference
August 19-21, Destin, Florida
Hilton Sandestin Beach Golf Resort & Spa

Live Production, Welfare & Biosecurity Seminar
September 15-16, Nashville, Tennessee
DoubleTree by Hilton Downtown

Environmental Management Seminar
September 16-17, Destin, Florida
Hilton Sandestin Beach Golf Resort & Spa

Poultry Protein & Fat Seminar
October 6-7, Nashville, Tennessee
DoubleTree by Hilton Downtown

Air Cargo Seminars
Dates TBD
Riverdale, Maryland
New York, New York
Dallas, Texas

Grower Relations Seminars
Scheduled upon industry request

Poultry Wastewater Operators Training
Scheduled upon industry request