The Board of Animal Health has been working with other state agencies, federal agencies, universities and associations for several months preparing for the possibility of Highly Pathogenic Avian Influenza (HPAI) in Mississippi.

One of the lessons learned from states that experienced outbreaks is the need for immediate depopulation and disposal of infected flocks. In order to respond quickly, the Board of Animal health has enacted an emergency rule requiring each poultry grower to develop a mass mortality disposal plan for their farm.

The purpose of the plan is to pre-identify what type of disposal a grower will choose should any type of mass mortality event such as heat loss, natural disaster or disease loss occur. Birds may be disposed of by burial, composting in or outside the house, and in certain situations landfills can be used.

Burial is the preferred option because it removes the infected birds from the premises immediately without moving them up and down the road. Burial has traditionally been the method of disposal during heat loss, tornados and Hurricane Katrina.

Burial will allow an infected farm to move more quickly to cleaning and disinfection and could mean the farm gets back into operation more quickly.

Rumors have circulated recently that burial of carcasses or debris on your property may result in having to declare your property as a landfill and attach some notice to the deed of your property. I have confirmed with DEQ that this is NOT the case. State and Federal Laws allow the owner to bury carcasses or debris on their own property as long as it meets state requirements.

The mortality plan required by the emergency rule will be implemented by NRCS, therefore ensuring that the plan meets all state environmental requirements. Growers should contact the local NRCS Office to request assistance developing the plan.

NRCS will pinpoint an appropriate burial site that has a stable soil type and that is not prone to flooding or too close to an underground water table.

The Board of Animal Health has recently implemented a texting alert service. To stay up to date on poultry information from the State Vet’s Office simply text “POULTRY” to 70000.

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As everyone in the poultry industry in Mississippi makes preparations for the possible outbreak of Highly Pathogenic Avian Influenza (HPAI) this fall, there are some changes that growers will see and some that they won’t.

One change is that the U.S. Department of Agriculture announced Sept. 18 was that growers will share in the compensation for the birds lost that has gone to the owner of the birds in an HPAI outbreak. The Department will publish an interim rule to set out a split of indemnity payments between owner and grower.

In the case of low path AI, growers and owners of the birds in the past have split the indemnity payments, but that was not the case for HPAI. The HPAI payments will be based on fair market value.

Another change, growers will see is a biosecurity auditing system that will confirm that growers are following the individual biosecurity plan for their farms focusing on “minimizing the risk of spread between poultry operations and between individual houses on the same operation.”

USDA is “publishing an interim rule on HPAI indemnity that will contain a provision requiring all future “HPAI-affected commercial poultry producers to self-certify that biosecurity procedures were in place at the time HPAI was detected,” the Sept. 18 HPAI Preparedness Plan states.

One thing that will not change is your bankers’ interest in your success. MPA checked with several of the state’s largest lending institutions to find out what their response to HPAI would be.

“We want the growers who have loans from BankPlus to know that we will work with them to get through this should there be an outbreak affecting their farm,” said First Vice President Kenny Williamson.

First Financial Bank Vice President Michael Barnes said FFB had worked with growers on their loans when they were sidelined by hurricanes and tornadoes and would take the same approach with HPAI.

“Community Bank has partnered with poultry farmers for years and their financial success is an important part of our bank’s success. We will work with our growers,” said Senior Vice President Jay Swindle.

“Peoples Bank has a long history of working with our poultry growers and that will not change. If an outbreak were to occur, we would be right there with our growers working with them in every way possible.” Said Senior Vice President Chris Caughman.

“Nearly 100 years, Southern AgCredit has been there for our customer owners during good times and bad. That commitment remains a cornerstone of our cooperative structure,” said Southern Ag Credit CEO Joe Hayman.

Hopefully, HPAI will bypass Mississippi this fall, but if it doesn’t it will require everyone working together and that cooperation of integrators, growers, state and federal agendas, lending institutions, universities and others has already begun.

Lending A Helping Hand

First Financial Bank makes poultry loans wherever poultry growers are located. Our commitment to customer service, our financial strength and our poultry loan specialists make choosing First Financial Bank a sound business decision. We are dedicated to providing the very best financial services. Call us today, we’ll come to you!
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Extraordinary is about giving more when you could get away with less. It’s about doing the research and gaining the experience to implement real solutions. It’s about building a network of applicators to help customers get the best results possible.

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The biggest decision you as a voter will make November 3 is whether you want to change who is in charge of funding for Mississippi’s public schools.

A group calling itself Better Schools Better Jobs, funded by more than $2.5 million in money from groups based in Atlanta and Washington DC, collected enough signatures to put a constitutional amendment on the ballot, known as Initiative 42. The amendment removes the Legislature and its authority from three places in the Constitution’s Section 201, which deals with public schools. It then gives the chancery courts power to decide whether the “system” of public schools is “adequate and efficient.” The judge will also be empowered to make significant decisions about how local schools are run – including curriculum decisions and even school district consolidation.

The Mississippi Poultry Association and numerous other business groups are opposed to the amendment for several reasons. Members of the Legislature are elected to make decisions about the budget in context of all the needs of the state’s citizens. If Initiative 42 passes and a suit is filed against the State, the case would be heard in Jackson by one chancery judge who would decide what is adequate and efficient for each school district in the state.

Supporters of the amendment say they want the Legislature to fully fund the Mississippi Adequate Education Program formula. The Legislative Budget Committee estimates there will need to be an additional $201 million to fully fund the formula. Supporters of Initiative 42 say they would be willing to give the Legislature seven years to achieve full funding, but that wiggle room is not in the constitutional amendment on the ballot. In fact, neither “funding” nor the “Adequate Education Program” are in the amendment.

Some Legislative leaders have said they will fully fund the MAEP formula immediately if the amendment passes. This could mean a tax increase or budget cuts, or both, to find the $201 million. MPA supports effective public schools, but also depends on community colleges and universities to supply employees, workforce training, and advanced research. MPA is especially concerned about the negative impact on community colleges and Mississippi State University if cuts have to be made to find funds for public schools. Funding for transportation projects to improve roads and bridges would also be affected.

In addition, MPA says other state agencies the poultry industry works with could see budget cuts, such as the Mississippi Department of Agriculture and Commerce, the Board of Animal Health, and the Mississippi Department of Environmental Quality. If Mississippi does not provide adequate funding for MDEQ, federal regulators could step in to perform functions such as permitting and inspections, which would not be good for growers or processing plants.

In fact, House Appropriations Committee Chairman Herb Frierson, R-Poplarville, asked state agencies to submit plans for a possible 7.8 percent budget cut. In many agencies, already stretched too thin, this would mean layoffs.

The Legislature placed an alternative constitutional amendment on the November ballot. The Legislative alternative is known as Initiative 42A. The Mississippi Poultry Association is also opposed to this amendment.

The first question you will face on the ballot is, do you favor amending the Constitution, or are you against both 42 and 42A. MPA believes the best answer is to vote “AGAINST BOTH.” You do not have to vote after that. More info is on MPA’s website.

Keep the legislators you vote for in charge of the decisions about the state budget to avoid cuts to other areas of state government that are important to the health of Mississippi’s poultry industry.
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International Paper Company has provided a $5,000 contribution to the Mississippi Poultry Foundation for a scholarship to promote future leadership within the poultry processing industry through an investment in the students of Mississippi colleges and universities.

“International Paper Co. wishes to help Poultry Science students who have proven academic excellence and leadership abilities and help students who are assisting with research that benefits the poultry industry in Mississippi,” said Stephen Howell, IP Plant General Manager Bay Minette Container. This is the second year IP has provided a scholarship through the Foundation.

Claudia Castaneda is a Poultry Science graduate student at Mississippi State working with Dr. Aaron Kiess. Claudia received her undergraduate degree from Zamorano Pan-American School of Agriculture in Food Science. One area of research that is of particular interest to her is identifying alternatives to antibiotics.

Claudia will be participating with research that specifically evaluates the potential for probiotics, a live beneficial bacterial culture, to become an alternative for antibiotics. Her efforts, along with other graduate students will be to identify the impact probiotics have on broiler chick hatchability and performance when injected into an egg on day 18 of incubation using InOvo technology. The research potentially may demonstrate a method by which broiler chicks are protected from colonization of pathogens before they even hatch, thereby reducing or possibly eliminating the need for antibiotic supplementation over the grow-out cycle altogether.

Courtney Ennis is a Poultry Science graduate student at Mississippi State working with Dr. Kelley Wamsley. She received her undergraduate from Auburn University in Poultry Science. One area of research that is of particular interest to her is feed.

Courtney will be conducting research entitled “Nutritional strategies to improve broiler performance and gut health.” This project is important and relevant for Mississippi’s poultry industry, as feed and feed manufacture costs make up the majority of the production costs. Some methods that will be utilized are the use of various feed additives (exogenous enzymes) and alternative feed ingredients (i.e. wheat). As a result of this study, there should be a better understanding on these issues and hopefully determine if the use of enzymes and other feed additives may be used in conjunction to enhance broiler nutrition and growth.

Alisha Moore is a Poultry Science graduate student at Mississippi State. She received her undergraduate degree in Animal and Dairy Sciences from Mississippi State. Her particular area of research is in Salmonella Heidelberg and Campylobacter jejuni.

Alisha will be working on research concerning Salmonella Heidelberg and Campylobacter jejuni reduction of ground chicken frames treated with commercial antimicrobials. The main objective of the research is to evaluate the efficacy of the approved antimicrobials used in poultry processing against Salmonella Heidelberg and Campylobacter jejuni in mechanically separated chicken as a dip treatment for chicken frames.

Xi Wang is a Poultry Science doctoral student at Mississippi State. She received her undergraduate degree from China Agricultural University and her master’s degree from Mississippi State in Poultry Nutrition.

Xi will help conduct research using synbiotics (prebiotics and probiotics) to improve growth performance and gut health in broilers with or without Coccidiosis challenge. The goal of the study is to evaluate the efficacy of using commercial prebiotics and probiotics to improve growth performance and gut health in broilers under coccidiosis challenge. By working at interface between theory and practice, she hopes to disseminate their findings to the broiler industry for them to make well informed decisions.
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For the sixth year, First Financial Bank has donated funds to the Mississippi Poultry Foundation for two scholarships to students in Poultry Science at Mississippi State University. This year’s winners selected by the Foundation Scholarship Committee are:

**Dana Dittoe**

Dana Dittoe, a senior at Mississippi State University, received a $1,000 scholarship for the 2015-2016 school year. Dittoe is a Poultry Science major. She is the daughter of Robin Mutter and Dennis Dittoe of Milford, Delaware. After completing her undergraduate degree, Dana plans to further her education at Mississippi State by pursuing a master’s degree in poultry science.

At Mississippi State University, Dana has excelled both academically and in extracurricular activities. She is a member of the National Society of Collegiate Scholars, Secretary of the MSU Poultry Science Club, a member of the Mississippi State Collegiate Future Farmers of America, and a member of Sigma Phi Lambda Christian Sorority.

**Kathryn Danielle Lott**

Kathryn Danielle Lott, a senior at Mississippi State University (MSU), received a $500 scholarship for the 2015-2016 school year. Kathryn is majoring in Poultry Science. She is the daughter of Vickie and Kelvin Lott, of Beaumont, Mississippi, who grow poultry for Mar-Jac Poultry MS, LLC.

After completing her undergraduate degree, Kathryn plans to dedicate her career to the poultry industry. Kathryn plans to continue to increase her hands on experience in the field and use that to help the industry grow. Through hard work and determination, she hopes to leave a positive impact on the industry. Kathryn has excelled both academically and in extracurricular activities. She is a member of Phi Theta Kappa, Poultry Club, Ag Science Club, and a two year recipient of the Letter J Award at Jones County Junior College.

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Mississippi’s elections are two-thirds done and about two-thirds of the Legislature elected, but the Nov. 3 general elections will determine the direction the state takes in the next four years.

The turnout in the August party primaries was low. All statewide officials made it to November and most incumbent legislators were re-elected. Certain counties could see higher turnout on Nov. 3 due to elections for judges in new districts.

Party primaries and runoffs were completed in August resulting in the election of 80 of the 122 representatives and 30 of the 52 Senators. Of those already elected there are 39 Democrats and 41 Republicans already elected to the House. In the Senate there are 13 Democrats and 17 Republicans who face no opposition in November.

Heading into the November general elections, there are 39 House races where Democrats and Republicans face off. In the others, there is an independent or third party candidate on the ballot. In the Senate, there are 17D-R match-ups.

So far, there are 11 freshmen members of the House and November will bring at least a dozen more because of races where there is no incumbent. Four senators will be new in January and there will be at least another three new ones from open seats. A complete list of the statewide, district and legislative elections are on the MPA website, www.mspoultry.org.

Legislators with some connection to the poultry industry will increase. Rep. Michael Evans, D-Preston, was re-elected. Evans and his wife, Heather, are Peco growers, who have hosted several visits by his colleagues in the House and Senate to their breeder farm.

Evans will be joined by two new Senators. Juan Barnett, mayor of Heidelberg, replaced Sen. Haskins Montgomery, D-Bay Springs. Barnett’s in-laws are Wayne Farms growers. Sen. Jenifer Branning, R-Philadelphia, replaces Sen. Giles Ward, R-Louisville, is an attorney whose clients include poultry growers in her district. Branning’s first mail piece showed her in a chicken house. All three received support from the Mississippi Poultry Association Political Action Committee.

The MPA-PAC is also supporting Sanderson Farms grower Vince Mangold of Brookhaven in House District 53 in a November race.

On the statewide level, all incumbents are favored to win in November. The only race that could be close is for attorney general where former federal prosecutor Mike Hurst, running as a Republican, is facing long-time Attorney General Hood, a Democrat.

With Gov. Phil Bryant and Lt. Gov. Tate Reeves expected to win easily and House Speaker Philip Gunn, R-Clinton unopposed in his district, there have been rumors that the 2016 session will be shortened because of no turnover in these top three offices.

The Mississippi Constitution sets 125 days as the limit for a session in the first year of a new term. The other three years, the session is limited to 90 days. In prior years with similar situations, legislative leaders have shortened the first session of a term.

In 2012, Gov. Bryant, Lt. Gov. Reeves and Speaker Gunn were all new to their posts. Gunn was elected by his colleagues as the first Republican Speaker of the House in 136 years after Republicans gained a majority in the House. Republicans are expected to retain the majority, if not add to it, in both chambers.

The Legislature in 2015 redistricted the circuit and chancery courts and added judges in the following counties where there will be elections. Voters in Amite, Franklin, Holmes, Leake, Madison, Pike, Rankin, Walthall, and Yazoo counties will be electing chancery judges. Voters in Covington, Forest, Jasper, Jefferson Davis, Lamar, Lawrence, Madison, Marion, Pearl River, Perry, Rankin, Simpson, and Smith counties will elect circuit judges.

Be sure to vote November 3.
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Brunini has considerable expertise in environmental litigation, regulatory permitting and compliance issues as well as due diligence and transactional matters. John Milner was noted by Chambers USA as being “instrumental in developing Brunini’s environmental practice” into the leadership position it holds today.

John Milner serves as counsel to the Mississippi Poultry Association and has special expertise in poultry-related environmental issues. Partners Gene Wasson and Richard Cirilli, Jr. also have impressive abilities in the environmental sector.

R. Richard Cirilli, Jr.  John E. Milner  Gene Wasson

Listing of areas of practice does not indicate any certification of expertise. Any decision with respect to legal service should not be based solely on this or any other advertisement. Free background information upon request.
The States of Mississippi, Texas and Louisiana, argue in a federal lawsuit that the U.S. Environmental Protection Agency’s Waters of the U.S. (WOTUS) rule that the court should move ahead with an injunction as a federal judge has done in 13 other states because the three southern states “will have to either bear the burden of compliance or risk enforcement, including penalties.” The rule expands federal authority over waters that have always been regulated by the states.

The State of Mississippi, as well as the states of Texas and Louisiana, in State of Texas, at el., v. EPA, pending in the U.S. District Court for the Southern District of Texas’ Galveston Division, filed a motion (“MS Motion”) to partially lift a stay the court issued on Aug. 14, and to seek expedited consideration of the motion, to allow the states to present their case for an injunction against the implementation of U.S EPA’s final rule entitled “Clean Water Rule: Definition of ‘Waters of the United States’” (“WOTUS”), 80 Fed Reg. 37054 (June 29, 2015). The case also challenges the merits of WOTUS, which EPA and the Army Corps of Engineers jointly developed and finalized earlier this year in order to resolve uncertainty about the scope of WOTUS.

Supporters say WOTUS provides regulatory certainty following Supreme Court rulings that created competing tests for jurisdiction, but numerous critics – including the State of Mississippi – argue that WOTUS expands EPA’s authority far beyond Congress’ intent. As the MS Motion stated: “Far from clarifying, however, WOTUS further complicates the scope of federal jurisdiction over waters and even grants the federal government additional jurisdiction over numerous dry-land and water features. In so doing, WOTUS violates the CWA [‘Clean Water Act’], the Administrative Procedures Act (“APA”), and the United States Constitution.”

In addition to the Mississippi suit, at the time this article went to publication, there are at least thirteen other district court actions challenging WOTUS. Only one, North Dakota v. EPA, Case No. 3:15-cv-59 (D.N.D.), has taken action, granting a preliminary injunction against WOTUS’ implementation on August 27, 2015. On September 4, 2015 the North Dakota court held that the scope of its injunction is limited to the 13 entities actually before it, which did not include Mississippi, Texas or Louisiana. Consequently, the MS Motion stated: “This ruling leads to an unfortunate piecemeal approach in which the States in this case must separately pursue preliminary injunctive relief. Therefore, the States request that this Court lift the stay in this case for the limited purpose of allowing the States to seek and obtain preliminary injunctive relief.”

Mississippi, as well as Texas and Louisiana, argue that regardless of the outcome of Oct. 1 oral arguments in an action filed by EPA before a federal Judicial Panel for Multidistrict Litigation (which seeks to transfer and consolidate all WOTUS suits in one action), the panel’s deliberations will likely delay the states’ efforts to seek preliminary injunctive relief: “During that time, given the federal government’s position that WOTUS is in effect, the States will have to either bear the burden of compliance or risk enforcement, including penalties. Lifting the stay now and expediting the preliminary injunction proceeding so that the States may seek similar relief to that obtained by their North Dakota brethren promotes uniformity and eliminates uncertainty.”

Please contact MPA environmental counsel, John Milner of Brunini, Grantham, Grower & Hewes PLLC law firm, if you would like additional information or have questions concerning this article at jmilner@brunini.com or (601) 291-4696.
Poultry processors continually search for strategies to lower costs, increase efficiencies and improve their deliverable product. Millions are spent researching bird health, production line methodology and just-in-time supply techniques. And yet condensation, a critical element that causes production delays, schedule shortfalls and lost productivity, is merely managed.

The common solution to the condensation problem has been to employ wiper teams with sponges on extension poles. The result is increased labor costs, employee management struggles and efficiency rates that are completely dependent on labor. And the condensation is only marginally managed.

With a mechanical solution from Sunbelt Rentals, condensation can be eliminated before it even occurs. Mechanical solutions from Sunbelt maintain environmental conditions within an optimal range. Sunbelt implements a structured approach based on experience in poultry processing facilities, focus on cost reduction through improved engineering, and partnerships with mechanical equipment manufacturers.

Mechanical equipment operates 24 hours per day for a fixed rental fee, eliminating employee-related costs. Because the equipment can be rented seasonally, there are no capital liabilities. The processor pays for a solution that is capable of improving the environment within the facility, eliminating condensation-related delays and maintaining fresh air supplies for those working in the space.

The indirect cost savings associated with using mechanical solutions are also significant. 24/7 operation allows for wash down and other important cleaning operations to take place on late shifts, reducing production delays during peak hours. In addition, the reduction of ambient moisture, a primary agent in the premature degradation of building materials, helps to reduce intangibles such as defrost time in coolers and equipment maintenance. By maintaining an environment that is low in moisture content, a facility owner can extend the lifecycle of an asset and increase long term profitability.

With a mechanical solution from Sunbelt Rentals, processors can remain on schedule and achieve production and profitability goals.

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Poultry processors continually search for strategies to lower costs, increase efficiencies and improve their deliverable product. Millions are spent researching bird health, production line methodology and just-in-time supply techniques. And yet condensation, a critical element that causes production delays, schedule shortfalls and lost productivity, is merely managed.

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Consumers around the world are asking for safe products with high nutritional quality. This requirement has resulted in the adoption of major changes in the global food industry. Mississippi’s poultry industry is no stranger to this situation. With diseases such as salmonellosis, which commonly relates to poultry products, poultry farmers are forced to seek strategies for the management and control of this potential threat to human health.

Salmonellosis is a complex and difficult disease to manage, not only because of the factors related to poultry production, but also because of the interaction of factors related directly to the mishandling of food. The inadequate management of the cold product chain may also contribute to the problem, so consumer education plays an important role in the control of this foodborne disease.

On the other hand, the new provisions related to the use of antimicrobials (National Strategy for Combating Antibiotic-Resistant Bacteria - CARB) presents a picture that in many cases can be worrisome because there are fewer drugs available for the treatment of diseases of commercial birds. This is a new challenge for the poultry industry. So, our chickens must be selected to be more resistant to infections and we will need to provide conditions that enable them to respond to the new health challenges. The concepts related to increase the resistance to diseases include not only genetic improvement, but also the need to improve our biosecurity conditions under the concept: “less pathogenic agents - less chance of disease.”

It is time to stop and think about what we must do to preserve the integrity of the defense mechanisms of our birds. The proper functioning of the respiratory and immune systems and the very important intestinal integrity play a crucial role in maintaining good poultry health. The maintenance of the natural defense barriers provides a maximum of chances to get ahead before a challenge with pathogenic microorganisms.

For the poultry industry, controlling the prevalence of Salmonella is important for several reasons. First of all, regarding food safety, this zoonotic agent can cause food borne disease and have a remarkable impact on public health. On the other hand, the presence of this bacterium may turn into an international sanitary barrier. Finally, because of its effects on the health of the birds, Salmonella can cause a serious economic impact.

The multiplicity of factors involved in this issue requires the formulation of integral interventions so every sector of commercial poultry industry can contribute to reduce the presence of Salmonella in the final product. The main objective is to ensure that the product, once cooked, is safe for consumption.

The formulation of programs such as “farm to the fork” seek to provide the final consumer a safe product that is free of disease-causing agents as well as residues of antibiotics and chemicals. Regarding bacteria, this concept focuses primarily on the control of Salmonella. The commitment of the poultry industry must be to deliver a product of very high quality, both for the domestic market and for international trade. The industry should strive not only to improve management standards and modernization of technology on farms, but also base the use of specific control programs on the diagnosis of the real Salmonella situation in poultry farms.

Salmonella’s diversity: another factor that contributes to the problem.

The genus Salmonella exhibits a great diversity. To date, more than 2649 serotypes have been identified. Additionally, this bacterium has a large variety of hosts (cattle, pigs, birds, reptiles, rodents, vegetables, etc.). The most important serotypes are those that are not restricted to a single species and can affect humans and animals (zoonotic Salmonella), causing the so-called foodborne diseases.

Another aspect that contributes to the problem is the wide variety of serotypes that is often not even clearly identified (known as emerging serotypes or wild serotypes). On the other hand, the multiplicity of existing sources of infection makes it harder to undertake effective prevention programs. So it appears that the current approach to the management of salmonellosis is to implement measures to achieve a minimum level of infection for Salmonella that are important in public health (such as S. Enteritidis, S. typhimurium, and S. Heidelberg) without neglecting the control of the emerging or rare serotypes.

One study carried out at the Poultry Research and Diagnostic Lab in 2012, identified 12 Salmonella serotypes: Enteritidis, Typhimurium, Kentucky, Bredeney, Mbandaka, Saintpaul, Montevideo, Cubana, Lille, Sentfenberg, Johannesburg, and one serotype Unique 094 from commercial birds and their environment in isolates from Mississippi. Antimicrobial resistance of these bacteria showed some of them as multiresistant (resistant to 3 or more antimicrobials). During 2015, Salmonella serotypes Enteritidis, Typhimurium, Braenderup, and Kentucky have been identified in samples from poultry. Similar to those isolates from 2012, these 2015 isolates are also multiresistant.

Control strategies: there is not a single measure to end the problem

Salmonella should not be underestimated. It is a great opponent who can respond to new situations and new challenges. Whether we like it or not, every action we take to control this bacterium...
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is also an opportunity for Salmonella to adapt to the new conditions and improve their ability to persist in the environment of our farms. It is paramount to have good diagnostic methods because several serotypes can display different characteristics due to the great diversity of this bacterium. Therefore, it is necessary to establish comprehensive and intensive monitoring and identification programs throughout the poultry production chain. We have to “know our enemy.”

Control strategies may differ depending on the objectives pursued. One of the main focuses is to prevent the disease in humans; another specific interest is preventing the disease in birds. Globally, control strategies include the adoption of measures to mitigate, contain and, mainly, prevent the spread of the bacteria.

With such a complex disease it is important to note that there is no a “magic bullet.” The management of this disease should focus on the combination of actions involving the use of safe vaccines, high levels of biosecurity and strategies to preserve the integrity and good function of both the immune system and the gastrointestinal tract. Therefore, the first step and biggest challenge under the goal of producing safe food of high nutritional quality, is to know the real Salmonella situation on each farm. This information will allow the adoption of effective control measures.
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Introduction
The natural world around us is teeming with microbes, such as fungi (ex. mushrooms), bacteria (ex. lactobacillus in yogurt), protozoa (ex. coccidia) and viruses (ex. avian influenza). The majority of these microbes are not harmful, and some are even beneficial to mankind such as yeast to make bread and viruses (bacteriophages) that kill pathogenic bacteria like Salmonella. In fact, one gram (about the size of a large paper clip) of feces from your large intestine contains approximately 100,000,000,000 bacteria! Researchers estimate that there are 10 times more bacteria living on and in your body than you have cells that make up your body! In fact, many of these microbes are important for our overall health. Good bacteria, such as probiotics (ex. Activia™) may actually exclude bad bacteria that could make you sick. Alternatively, individuals taking antibiotics can develop treatment associated diarrheas because of the drastic changes in the normal population of microbes that live in the gut. Animals also encounter these organisms in their environment. They have similar needs for beneficial bacteria, and have defense mechanisms to ward off disease-causing microbes.

Biosecurity
Unfortunately, it is very easy to transmit unwanted microbes from one area to another via shoes, clothing, hands, tires, floor mats, dust, pets, insects, rodents and wild birds. We practice good biosecurity to prevent the transmission of poultry diseases such as avian influenza. The 2015 avian influenza outbreak has resulted in the deaths of approximately 48 million birds, and the federal government has allocated $700 million for disease eradication efforts. However, these numbers don’t account for the emotional hardship and lost revenue that these companies and growers have had to endure. Something as simple as hand washing or having farm specific footwear may have prevented the spread of this disease in many cases. As a grower, you already have a leg up on disease prevention. For example, primary breeders have ultra-secure facilities so that they may produce disease free and healthy parent stock for the integrators. The integrators also have rigorous biosecurity protocols in place to protect the health of their flocks and maintain bio-secure facilities such as feed mills and hatcheries. In fact, a commercial hatchery is very similar to a hospital when one compares the intense amount of cleaning and disinfection involved. Veterinarians also have specializations in avian medicine and are continually evaluating the overall health of the flock. They develop vaccination programs and work closely with nutritionists on antibiotic alternatives, such as probiotics, to keep your birds healthy.

Farm Biosecurity
A broiler or layer house does a great job of providing a comfortable environment for the birds and isolates them from diseases in the environment. Although microbes can’t be seen with the naked eye, they are present on every surface. A certain level of paranoia should exist with everyone who is involved in animal husbandry. Anything and everything could be a carrier for a deadly disease that could ruin your business. You should ask yourself, how can a disease agent enter my farm?

- Do I wash my hands often?
- Do I dispose of mortalities quickly and properly?
- Do I ask visitors to clean and then disinfect their tires?
- Is my road a dry impermeable surface or is it always muddy?
- Do I maintain a visitor log book?
- Do I ask visitors if they were recently in contact with poultry?
- Do I use footbaths and are my footbaths changed regularly?
- Do I provide a garden sprayer with the correct disinfectant and setting, and a water hose at the gate to rinse and then disinfect vehicles?
- Are biosecurity and “do not enter” signs installed at the farm entrance?
- Do I provide shoe coverings, hair nets and coveralls for guests?
- Do I allow my dogs or cats to enter the poultry barn?
- Do I have farm specific footwear and clothing for myself and farm hands?
- Does my poker buddy have backyard chickens at his place?
- Do my Master Gardener friends raise ducks and fancy chickens?
- Could I have exposed my chickens to diseases by duck hunting?
- Can wild birds enter my house? Do they nest nearby?
- Am I providing habitat for unwanted wildlife?
- How effective is my rodent control program?
- How effective is my insect control program?
- Are feed bins secure and are spills cleaned up promptly to deter wild birds and rodents?
- Is my drinking water potable (low sodium, neutral pH, low bacteria, etc.)?
- Did I power-wash the equipment that I borrowed from my neighbor?
- Is the contractor or repair person aware of my biosecurity program?
- Are the materials that I bring onto my farm clean?
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Types of Disinfectants

Although we don't live in a sterile world, we can use cleaners and disinfectants to reduce the number of germs present on agricultural surfaces. By reducing the total microbial load, we can lower the number of pathogens that our birds may be exposed to. Disinfectants work by damaging cell membranes, affecting metabolism, denaturing proteins and lipids or disrupting RNA and DNA within a microbe. The major classes of agricultural disinfectants are oxidizing agents, quaternary ammonia compounds (QAC), aldehydes, unique blends of two or more disinfectants, and triple phenols. Aldehydes, such as formaldehyde and glutaraldehyde (Glutex GS-2™), are very effective against pathogens that are difficult to kill such as fungi and bacterial spores. However, formaldehyde has carcinogenic properties and isn’t as prevalent today as it was 50 years ago. Glutaraldehyde is a safer alternative, although precautions still must be taken to protect the applicator. Several glutaraldehyde blends are available in the marketplace that combine the strength of QACs and aldehyde chemistry (Synergize™, Glutex GQ-1™, Virocid™). Halogens include your bleach or iodine based products. Bleach works well against many pathogens, but it does have a short shelf life, requires a much higher (4-8 oz/gallon) mixing rate, and should be mixed fresh on the day of application. Both chemicals are corrosive and can damage surfaces that they come into contact with. Oxidizing agents include potassium peroxymonosulfate (Virkon™), hydrogen peroxide (Siloxicide™) and peracetic acid (Peraside™, Keno™). They are also broad spectrum disinfectants, but can be corrosive to some metals. Phenols work fairly well in the presence of limited organic matter and can kill a wide range of pathogens, but they aren’t very effective against spores or fungi. Quaternary ammonia compounds by themselves are not very popular in live production agriculture, and are limited to niche applications in the hatchery. They are shelf stable, are not corrosive and are inexpensive. However, they have limited efficacy against Gram negative organisms and are easily inactivated in the presence of organic matter.

Product labels instruct the user on proper usage, appropriate contact surfaces and pathogens which a disinfectant is effective against. Organic matter will always and significantly reduce the efficacy of a disinfectant, although some (phenols, glutaraldehydes) work slightly better on dirty surfaces than others. Water hardness may also have a negative effect on disinfectant capability (quaternary ammonia compounds). When using a foamer, it’s important to remember that some classes of disinfectants work well with soap, but others are incompatible.

Most disinfectants require a surface contact time of 10 minutes according to the EPA testing protocols that dictate what can appear on the label, which is something to consider when using a foot bath or disinfecting vehicle tires. Additionally, many of these disinfectants can be hazardous to human health if not applied properly and without the proper personal protective equipment. Therefore, it’s very important to read and understand your product label.

Cleaning and Disinfection

Disinfectants are oftentimes abused and expected to replace elbow grease (cleaning). There are many quality products available, but none of them will work as well as they can unless the surface that they’re applied to is properly cleaned first. Cleaning (99%) and disinfection (1%) is a five step process:

1. The surface must first be **dry cleaned**. This means that a skid steer, shovel, scraper or broom is used to remove the bulk of the organic matter present...away from and out of the facility.
2. The second step is to apply an agricultural **soap or cleaner** via foam, garden sprayer or pressure-washer. Soap reduces water surface tension and allows it to better rehydrate and break up dirt.
3. The third step is to thoroughly **rinse** the surface. Rinsing is typically accomplished with a pressure-washer to improve effectiveness.
4. The fourth step is to properly **dry** the surface using fans and squeegees.
5. The fifth and final step is to **apply the disinfectant**. The reason for drying the surface prior to the application of the disinfectant is to prevent further dilution of the disinfectant. If an applicator sprayed disinfectant on a water puddle then that individual would’ve diluted the disinfectant below its effective concentration, significantly reducing its usefulness. Foaming is better than spraying disinfectant for vertical surfaces and ceilings.

Take Home Message

- Microbes are present in our natural world, and we need them to survive.
- Germs can easily be spread by animals and inanimate objects, but proper biosecurity can reduce this risk to acceptable levels.
- A surface must be properly cleaned and dried for a disinfectant to work properly, or really work at all.
- Many products and equipment are available for cleaning and disinfection. It is the responsibility of the applicator or grower to find the correct “tool” for the job and to apply the material in a correct, safe, and environmentally sound way.

The information given here is for educational purposes only. References to commercial products, trade names, or suppliers are made with the understanding that no endorsement is implied and that no discrimination against other products or suppliers is intended.
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Commissioner of Agriculture and Commerce Cindy Hyde-Smith set up a briefing for Gov. Phil Bryant and his staff on efforts to prepare for the possibility of a highly pathologic avian influenza outbreak in Mississippi this fall. State Veterinarian Dr. Jim Watson has been coordinating the response plan with numerous state agencies including the Departments of Agriculture and Commerce (MDAC), Environmental Quality, Health, and the Mississippi Emergency Management Agency. Gov. Phil Bryant pledged his support for coordinated state response to assist the poultry industry, Mississippi’s largest agricultural industry. Pictured from left behind Gov. Bryant are: Commissioner Hyde-Smith, John Campbell, MDAC Deputy Director, Dr. Watson, Mark Leggett, President of the Mississippi Poultry Association, and Julie McLemore, MDAC Director of Regulatory Affairs.

Gov. Phil Bryant, Commissioner Hyde-Smith, John Campbell, MDAC Deputy Director, Dr. Watson, Mark Leggett, President of the Mississippi Poultry Association, and Julie McLemore, MDAC Director of Regulatory Affairs
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The Mississippi Poultry Association MPA Education and Research Committee hosted this year’s Fall Breeder and Hatchery Seminar at two locations on August 11 and 12. The Mississippi State Diagnostics Lab in Pearl provided the location on August 11, while the Collins Civic Center in Collins served as the location on August 12. There were over 100 participants who attended the Pearl and/or Collins location. Attendance consisted of hatchery managers and personnel, breeder and pullet managers, service technicians, allied members, and sponsors.

The goal of the seminar was to provide attendees information concerning recent developments and practices that could increase the overall efficiency and productivity of hatcheries and farms. Topics covered at the seminars were: Hatchery Management Techniques for Improved Chick Quality & Mortality (Jiggs Kilgore Hubbard), Early Embryo Mortality (Dr. Chris McDaniel MSU), Incubation Physiology Facility: Overview & Future Programming (Dr. David Peebles MSU), Feeding Concepts/Feed Distribution For Broiler Breeders (Tommy Walker, Cobb-Vantress), Pest Control (Dr. Jerome Goddard MSU), Late in Life Fertility: How to Maintain Hatch after 50 Weeks (Darren Rakestraw Aviagen), Hatchery Sanitation (Dr. Sue Ann Hubbard Merck), In Ovo Vaccination (Dr. Chris Williams Zoetis), Highly Pathogenic Avian Influenza (Dr. John El-Attrache Ceva), and an Update on High Path Avian Influenza (Dr. Jim Watson Board of Animal Health).

MPA would like to thank our sponsors: Aviagen, Ceva, Cobb-Vantress, Hubbard, Merck, Mississippi State Poultry Science Department, and Zoetis for graciously providing sponsorship and speakers to this year’s seminar.

For those unable to attend the seminar, please visit our website, www.mspoultry.org. Once at our website, go to the media tab and click videos. The presentations will be located there.
UPCOMING EVENTS

HALL OF FAME RECEPTION FOR HENRY WELCH
Friday, October 30, 2015
Mississippi State University
Hill Poultry Science Building
Starkville, MS

GENERAL ELECTION
Tuesday, November 3, 2015

GROWER ADVISORY COMMITTEE MEETING
To Be Announced

If you want to join the Mississippi Poultry Association as a Grower Member, call the MPA office at (601) 932-7560 for more information!