POULTRY TOPS STATE’S AG VALUE LIST AGAIN

Mr. Robert Nathan Gregory, MSU Extension Service

Ag industry holds steady despite lower row crop values

STARKVILLE, Miss. -- Agriculture was a $7.7 billion industry in Mississippi this year, exceeding the total set in 2017 despite declines in the estimated value of row crops, timber, catfish and livestock.

The state’s largest agricultural commodity, poultry, is responsible for pushing the overall value above $7.5 billion for the second straight year, bringing in nearly $3 billion by itself.

“The strong poultry numbers made up for some lower production values in other commodities,” said Josh Maples, an agricultural economist with the Mississippi State University Extension Service. “Poultry prices have been lower in recent months, but prices during the first half of 2018 were much higher than during the first half of 2017, and egg prices have been significantly higher than last year.

“In total, poultry value is up 8 percent, or $230 million. That more than offsets the decreases in other commodities,” he said.

Forestry was a $1.25 billion industry, a 3 percent dip from 2017 values.

“Across the board, all timber products are doing better in south Mississippi than in north Mississippi due to more mills and competition,” said John Auel, assistant Extension professor of forestry at MSU. “The economy is doing well, but other factors are keeping housing starts down. Millennials are not buying houses like previous generations did.”

Included in the overall $7.7 billion total is an estimated $352 million in government payments -- the largest amount of federal assistance Mississippi producers have seen since 2009. These payments include protection against price and revenue declines.
One single vaccine dose never did so much. VAXXITEK® HVT + IBD provides lifelong immunity\(^1\) which leads to healthy birds, better performance and operational profits\(^2\). Talk to your local representative for more information.

REFERENCES
1 Data on file.
2 Data on file.

VAXXITEK\(^\circ\) is a registered trademark of Boehringer Ingelheim Animal Health USA Inc. ©2019 Boehringer Ingelheim Animal Health USA Inc., Duluth, GA. All Rights Reserved.
IN THIS ISSUE

Poultry Tops State’s Ag Value List Again .................................. COVER
Poultry Sees High Demand for Eggs, Larger Production ....................... 2
Benefits and Challenges of Effective Litter Management ....................... 3
MPA Poultry Management School Registration .................................... 11
Open Seats Bring Out Candidates for 2019 State and District Race ............. 13
USDA 10-Year Projections for Broiler Production .................................. 15
MSU Poultry Science Students Win Southern Ag Credit Travel Grant ............. 17
Member Spotlight: Gainey’s Electrical Service ..................................... 19
Agricultural Meat Industry Groups React to Democrats’ Irrational “Green New Deal” .......... 21
MSU and Alcorn Partner to Offer Poultry Science Dual-Degree Program ...................... 23
Correct Fertile Egg–Handling on the Farm: Key Factor for the Control of Diseases Transmitted by Feces ..................................................... 25
Benefits of MPA Membership ......................................................... 31
Poultry Disease Update: Virulent Newcastle Disease and Avian Influenzas .................... 33
Legislative Luncheon Has Legislators Serving Staff .............................. 35
Information on New DEQ Permits for Poultry Growers ........................ 37
Recipe: Grilled Chicken and Sweet Potatoes with Orange Glaze ......... 37
Upcoming Events ........................................................................... BACK COVER

MISSISSIPPI POULTRY ASSOCIATION

Pic Billingsley • Chair
Steve McLaurin • Vice Chair
Ted Mangum • Grower Advisory Committee Chair
Mark Leggett • President
Becky Beard • Administrative Assistant
Reed Wade • Grower Relations Coordinator

If you want to join the Mississippi Poultry Association as a Grower Member, call the MPA office at (601) 932-7560 for more information!
One type of the assistance was for growers affected by a trade standoff between the U.S. and China. This summer, China enacted tariffs on a long list of U.S. goods, including soybeans, corn, cotton, rice and wheat, in response to the U.S. ordering tariffs on imports from China.

“This trade war is not about agriculture. It’s about patent protection and trade of other goods,” said Keith Coble, professor and head of the MSU Department of Agricultural Economics. “Any country in trade negotiations knows that when you get hit, you have to hit back where you can hurt the other country the worst. In our case, we send a lot of ag products to China, and they knew hitting us there would put the greatest pressure on us.”

The gap between the values of soybeans and cotton, the state’s third and fourth largest agricultural commodities, closed by more than $138 million this year. Soybean values fell more than 5 percent from $1.12 billion in 2017 to $1.05 billion despite growers planting 10,000 more acres of the crop. One major factor in the lower prices was the Chinese tariffs.

Cotton, meanwhile, rose 14 percent to $623 million from $548 million in 2017.

The only other row crop that saw a value increase was rice, which jumped almost 13 percent to $117 million, compared with $104 million last year. Rice finished ninth out of 16 commodities.

“We’ve just got lower commodity prices almost across the board. Producer margins are really tight in all of agriculture,” Maples said. “Typically, you have some options. If corn and soybeans aren’t doing well, you might jump to cotton.

Producers have done some of that, but it’s not as if cotton prices are really high. They’re just not as low as corn and soybeans have been.”

Corn rounded out the top five, with a $351 million production value, up 4 percent.

The livestock industry was worth $422 million this year, a 1.3 percent decrease. With an estimated value of $305 million, beef cattle are up 7 percent and finished sixth, while milk production was down 11.4 percent at $22.9 million and finished 13th. Hogs finished one spot ahead of milk production with $94.3 million, a 19.7 percent dip from 2017.

“We’ve got large supplies of every livestock and poultry product,” Maples said. “We’re having to work through those supplies, and we’ll have the largest amount of pork, poultry and beef production we’ve ever seen in 2019 once you put them all together.”

Catfish finished seventh with a value of just over $164 million, a decrease of more than 9 percent from nearly $181 million in 2017.

Finishing eighth, sweet potato production had a value of nearly $118 million, a decrease of less than 1 percent from 2017. Specialty crops held steady at No. 11 with $104 million.

Peanuts, wheat and grain sorghum rounded out the last three spots. Peanuts were valued at $18.7 million, wheat at $12.1 million and grain sorghum at $1.3 million.

POULTRY SEES HIGH DEMAND FOR EGGS, LARGER PRODUCTION

Ms. Susan M. Collins-Smith, MSU Extension Service

STARKVILLE, Miss. – Poultry producers got off to a robust start in 2018, which helped the industry end the year strong.

Poultry remains Mississippi’s giant among the state’s agricultural commodities, topping the state’s value of production list for the 24th consecutive year with an estimated total production value of $3 billion. That figure is up 8.3 percent from 2017. Final production figures will be available in April.

“Poultry prices have been lower in recent months, but prices in the first half of 2018 were higher than during the first half of 2017. We are also expecting slightly larger Mississippi production totals in 2018,” said Josh Maples, an agricultural economist with the Mississippi State University Extension Service.

Three industry segments make up the overall value of poultry: broilers, eggs and chickens. Broilers are worth an estimated $2.7 billion, increasing 5.4 percent from 2017. Consumer demand for eggs pushed their value up 44 percent from the previous year to $304 million. Estimated value for chickens that produce table eggs stands at about $8 million, a 10.5 percent increase over 2017.

“Demand for eggs has been strong in 2018, even with the price increase from 2017,” Maples said. “U.S. egg production and
It is impossible to know at this point if avian influenza may regulatory testing, to help protect the state's flocks, including biosecurity practices and routine surveillance and guard and implement several disease management measures, Disease was a nonissue this year, but producers are always on to have near record yields, surpassed only by the 2016 harvest.

U.S. soybean farmers will likely harvest a record number of on feed grains, which consist mostly of soybeans and corn. Under control in 2019. Producers spend 70 percent of input costs for row crop producers across the country should keep feed costs favorably priced, but chicken is still less expensive for consumers. The meat price spread still favors poultry,” he said. “Beef and pork, which are chicken’s two biggest protein competitors, are favorably priced, but chicken is still less expensive for consumers.” While feed prices were higher in 2018, an excellent grain harvest for row crop producers across the country should keep feed costs under control in 2019. Producers spend 70 percent of input costs on feed grains, which consist mostly of soybeans and corn.

“The meat price spread still favors poultry,” he said. “Beef and pork, which are chicken’s two biggest protein competitors, are favorably priced, but chicken is still less expensive for consumers.” While feed prices were higher in 2018, an excellent grain harvest for row crop producers across the country should keep feed costs under control in 2019. Producers spend 70 percent of input costs on feed grains, which consist mostly of soybeans and corn.

“U.S. soybean farmers will likely harvest a record number of soybeans this season,” Tabler said. “Corn producers are expected to have near record yields, surpassed only by the 2016 harvest.” Disease was a nonissue this year, but producers are always on guard and implement several disease management measures, including biosecurity practices and routine surveillance and regulatory testing, to help protect the state’s flocks.

“It is impossible to know at this point if avian influenza may make a comeback,” Tabler said. “There are numerous cases overseas, but we will have to see what happens here as ducks and geese start to move.” Weather is a concern for the industry during any year because one crop failure could drastically increase producers’ costs. But the tariff situation brings added uncertainty to 2019. “Prices for lumber and steel used to build new chicken houses have skyrocketed,” Tabler said. “A new broiler house that cost $250,000 to build last December now is closer to $350,000. Higher tariffs are also making it more difficult for producers to export numerous agricultural products, including meat and grains.” Even though the tariff situation is an added concern, the industry always experiences a natural series of ups and downs, Tabler said.

“The poultry industry tends to run in cycles. It’s good for a while, and then it’s not so good for a while. I expect perhaps some slowdown next year, but that’s not unusual. That’s just business as usual,” he said.

One challenge the industry faces going forward is antibiotic-free poultry production.

“There are several challenges associated with this type of production, not the least of which is how to recover the additional costs to produce it,” Tabler said. “Even though consumers want chicken produced without antibiotics, they are often unwilling to pay the additional costs to produce it.”

BENEFITS AND CHALLENGES OF EFFECTIVE LITTER MANAGEMENT

Dr. Tom Tabler and Jessica Wells
Mississippi State University Extension Service, Poultry Science

Introduction

One of the most important aspects of commercial poultry production today is the effective management of litter material. Litter management practices will become even more critical as much of the broiler industry moves toward antibiotic-free production to meet consumer demand. Poor quality litter can have serious negative consequences on bird health and overall flock performance. Litter plays an important role in managing the moisture level within the broiler house. The litter acts as a huge sponge by absorbing large amounts of moisture and diluting the fecal material. However, depending on how good your management program is, litter can become overwhelmed by the amount of moisture in the house, resulting in wet or caked litter. Wet or caked litter tends to be at risk for higher ammonia levels, increased incidence of footpad dermatitis, and increased numbers of pathogenic organisms such as bacteria, molds, viruses, coccidia, and intestinal worms. Having adequate litter depth, which appears to be around three to six inches for optimal bird performance, will allow for greater water retention and will help pull water away from the surface of the litter where it is in contact with the birds. Litter should be able to absorb a lot of moisture from within the broiler house but should also have a quick drying time to get rid of the moisture it absorbs.

Emphasis on Paw Quality

Wet litter is likely the major contributing factor affecting condemned chicken paws due to footpad dermatitis issues. Chicken paw prices have skyrocketed in recent years due to an increased demand for high quality paws to export overseas. Prior to the mid-1980s, paws were of little economic value and were rendered along with the rest of the offal including blood, feathers, and the other unsaleable parts of the broiler. Things have changed dramatically since then, however, to the point that paws are now the third most important economic part of broiler chickens behind the breast and wings.

Paw quality is also used today as an assessment of bird welfare. Footpad dermatitis not only costs the poultry industry millions of dollars each year in lost revenue, it is also currently used as an indicator of welfare practices in animal welfare audits. Therefore,
From summer heat to winter frost, the ecology of a broiler house is constantly changing, which can lead to an increased coccidiosis challenge. The precocious strains of HATCHPAK® COCCI III vaccine induce optimum immunity with minimal lesions. So, at whatever level of coccidiosis challenge, your flock can be safely protected year round.

1 Data on file.

HATCHPAK® is a registered trademark of Boehringer Ingelheim Animal Health USA Inc.
©2019 Boehringer Ingelheim Animal Health USA Inc., Duluth, GA. All Rights Reserved.

AV16-003A / HPC(02/17)
the emphasis today on improving foot health and reducing the incidence of footpad dermatitis offers the opportunity for dual benefits that include: 1) increased profit from a greater number of exportable paws, and 2) having management practices in place that allow the poultry industry to meet current animal welfare standards.

There are **benefits to reused litter where paw quality is concerned**. Paw quality seems to be better on built up litter that is well maintained and has a proper moisture content than on new bedding or even second or third flock litter. New bedding that may be of inadequate depth, inferior quality, or contain large chunks or sharp edges does not lend itself well to maintaining acceptable paw quality. After a year or more of growing flocks on new bedding, the litter is deeper and softer, with fewer sharp edges, and paw quality improves if the litter remains dry. Therefore, even though there are challenges associated with reusing litter such as the potential for increased ammonia and pathogen levels, there are also benefits such as improved paw quality and cost savings from not having to purchase new bedding materials (which may be expensive and difficult or perhaps impossible to secure) quite as often.

**Litter Management**

Most bedding materials used by the poultry industry have become more expensive in recent years as **competing markets offer more for the materials** than is feasible for the poultry industry. This increased demand from competing markets may also mean a shortage of available material even if the price is favorable to the poultry industry. As a result, this may lead to situations where inadequate amounts of bedding materials are placed in broiler houses. In addition, spreader trucks may not uniformly spread bedding material resulting in material being thicker in the middle of the house and much thinner near the walls. Often times this will result in litter slicking over near the walls because the material is not deep enough at the walls to handle the moisture load in the house. It is **critical that the litter is evenly spread** throughout the house, end-to-end and side-to-side.

The goal of litter management is to ensure that the litter stays dry and friable throughout the flock. Two of the most common challenges to keeping litter dry are **inadequate ventilation** (especially during cold weather) and **poorly managed drinker lines**. Houses where the drinker lines are adjusted too low or have the water pressure adjusted too high will almost always have wetter floors. In addition, water supplies that carry a high particulate load or water lines that may have issues with biofilm growth will often times cause nipples to leak, increasing litter moisture. Frequent flushing and sanitizing the drinker and supply system may help reduce water wastage due to leaking nipples. Feeder and drinker lines are high-traffic areas and it is critical to maintain dry litter in these areas to improve its quality which, in turn, will improve paw quality, lessen the risk of hock burns and breast blisters, and maintain a better welfare environment. Increased water excretion by birds can result from health issues such as necrotic enteritis or from other factors such as medications used to treat disease, nutritional imbalances, and certain feed ingredients. All of these situations will challenge growers in their efforts to keep litter dry.

Inadequate ventilation also challenges growers and greatly reduces the chance that litter will remain dry and friable. Growers may reduce ventilation rates during cold weather to save on gas usage. However, as a result, the litter is soon overwhelmed by the increased moisture load in the house and begins to slick over and form cake. Relative humidity levels of greater than 70% for any extended length of time will result in wet litter. Once the litter has gotten wet, it will take a lot more heat to dry it back out than it would have taken to maintain it with adequate ventilation in the first place.

Fuel usage and cost are required to maintain optimal litter conditions early in the flock during cold weather. During cold weather, whenever minimum ventilation fans run on their time cycle, the brooders will generally come on shortly thereafter. Brooders running will increase the fuel cost and growers may be tempted to reduce the minimum ventilation rate but this should not be attempted. Moisture, CO₂, and ammonia levels quickly rise in an under-ventilated house, rapidly deteriorating the house environment and litter quality. However, by providing adequate ventilation and maintaining good litter quality, much of the fuel cost can be recaptured through improved bird performance throughout the flock.

**Litter Treatments**

Acidifiers are the most commonly used litter treatments. Acidifiers convert ammonia to ammonium. Unlike ammonia, ammonium does not easily convert to the gaseous form and tends to remain bound in the litter. Acidifiers also reduce the pH of the litter generally to between 4.0 and 7.0, thereby creating a hostile environment that inhibits the growth of ammonia producing bacteria and other potentially harmful bacteria such as *Clostridia*, *Salmonella*, and *E. coli*. Acidifiers generally have a short lifespan in the broiler house; usually two weeks or less. However, they do a good job during the early brooding period at keeping ammonia levels in check and helping to minimize fuel use.

The most common dry acidifiers are sodium bisulfate, aluminum sulfate and sulfuric acid clay. A combination of sulfuric acid and aluminum sulfate is a common liquid acidifier. **Sodium bisulfate** is a dry acid salt that is activated by moisture in the environment. It lowers litter pH, thus reducing ammonia, and the sodium component helps to reduce litter pathogen levels. Ammonia is bound by the sulfate, preventing it from being released as a gas. Sodium bisulfate works best when top dressed onto the litter close (within 24 hours) to bird placement.

**Aluminum sulfate** is similar to sodium bisulfate in that it is a dry acid salt but different in that the acid is produced through the reaction with water in the litter instead of environmental moisture. Aluminum sulfate has an added benefit in that it binds phosphorus, making it unavailable. The amount of litter moisture is critical if aluminum sulfate is used. Aluminum sulfate is most commonly top dressed onto litter three to seven days before chick placement, depending on litter conditions. Application time depends on level of litter moisture. Apply the product three to four days ahead of placement with “wet” litter (20-35% moisture) and six to seven days ahead of placement with “dry” litter (<20% moisture).

**Sulfuric acid** is commonly incorporated into a clay bead that looks similar to kitty litter for ease of application and safety purposes. Sulfuric acid is a very strong acid and does not require moisture for activation. Similar to sodium bisulfate and aluminum sulfate, ammonia is converted to ammonium and bound to sulfate. Application works best one to three days before chick placement.
A very specific loan product for a very specific client

BankPlus has a strong commitment to agriculture and to integrated poultry lending. For over 100 years, BankPlus has built our success on providing Mississippi farmers with customized financial services, great products and support that promotes agricultural production.

Our loan officers understand the unique challenges that modern farming operations face and are equipped with the skills and expertise to craft flexible loan products to meet your individual needs. Also, BankPlus has been recognized as a Top SBA Lender in MS.

FREE GIFT!

Retro Fit, Refinance or Purchase your poultry facility with a $500K+ loan from BankPlus and we’ll bring you a free gift at closing!

Leigha McLendon  
Vice President &  
Director of Guaranteed Lending  
601-607-4389  
LeighaMcLendon@BankPlus.net

Kenny Williamson  
Senior Vice President &  
Commercial Lending Team Leader  
601-607-4402  
KennyWilliamson@BankPlus.net
The liquid combination of aluminum sulfate and sulfuric acid is sprayed on the litter two to three days prior to chick placement. **It must be allowed to form a “crust” for 24 hours** to be effective. You should not walk on or disturb the litter while the “crust” is forming. It must be applied by a licensed applicator. Growers may purchase and apply the dry products themselves but it requires a license and special equipment to handle this product.

**Windrow Composting of Litter**

In many parts of the U.S., the poultry industry faces issues with the cost, quality, and availability of acceptable bedding materials. As a result, **many locations reuse broiler litter** to grow multiple flocks of birds over an extended period (sometimes several years). However, with this extended reuse of litter to cut costs and avoid the quality and availability of bedding issues, birds grown on built up litter over numerous flocks or years may be exposed to higher pathogen loads. Windrowing litter is a management practice that, when done correctly, is beneficial and can lower the pathogen load in reused broiler litter.

**Windrowing is not without challenges**, however. You must have sufficient downtime between flocks to windrow correctly. Anything less than 10 days of downtime will likely not lend itself to windrowing. Also, you can’t waste time. If you are going to decake, do it within one to two days of flock removal. Some complexes allow growers to leave the cake in the house, if there is not too much, to help the windrow produce heat, especially if the litter is very dry. If done correctly with enough moisture in the litter, the **windrows should heat to 130° F or more** (Figure 1). The first windrow should be constructed within two days of flock removal and allowed to stay windrowed for three days. Then turn the first windrow(s) and form a second windrow(s) that also stays in place for three days. After 3 days, level this second windrow(s) and allow three to four more days before chicks are placed. Make sure litter is level from side to side and end to end of the house! Otherwise, it will be very difficult to manage your feeder and drinker height throughout the house.

Be sure to **pull all the litter from the sidewalls and expose as much of the floor** as possible to the air (Figure 2). If you have a thick hardpan next to the floor, it may take multiple flocks of windrowing to eventually bust through this hardpan and incorporate it into your windrows. Many growers use simply a tractor and a pivoting blade to form the windrows, but several equipment companies now make specialized equipment to form the windrows. These specialized implements work well and may save time compared to a blade, but they are also more expensive. The implement you choose to use will be somewhat dictated by the unique situation on your farm.

![Figure 1. Windrows should heat to 130° F or more.](image1)

![Figure 2. Pull all material away from the wall and expose the floor.](image2)

If you hire a contractor to windrow your litter or share equipment with a friend or neighbor, **make sure equipment is cleaned and disinfected before it comes on your farm**! If you windrow your litter yourself, your level of expertise will determine how much time you will spend windrowing litter. It takes practice to become proficient at windrowing. With practice, you may be able to windrow a house in 30-45 minutes. If you are just starting out, it may take 2 hours or more to do a house. Spreading the windrow(s) back out will take longer than building them. The **litter has to be level when you spread them back out!** Use of one of the litter treatments discussed above will likely be beneficial after the litter is leveled back out to help control ammonia during the brood period of the next flock. Ventilate continuously from the time you build the windrow(s) until you prepare to preheat for the next flock to keep ammonia pulled out of the house.

Keep the end door(s) closed to keep the varmints out and enhance biosecurity. Curtain-sided houses may drop the curtains if your complex allows this. For solid-walled houses, you may open the minimum ventilation inlets or slightly open the tunnel inlets and run one large or two smaller fans continuously during downtime. Litter depth is important when windrowing. Litter depth should be maintained at three to six inches for optimal bird performance. Litter that is eight to ten inches deep or more is difficult to manage, especially with a blade, and may not heat well if the litter is dry and you have little or no cake or hardpan to increase the moisture content.
Solar South, LLC

USDA Grant pays you to improve your farm with solar panels.
Solar panels pay for themselves in just 6-10 years!
USDA Grant expires in April 2019, take advantage while you can!

601.498.1514 SOLARSOUTH.ORG
Environmental Law Group

Brunini’s environmental team is “one of the premier practices in the state” and represents major manufacturers and private industry clients.

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. Partner Gene Wasson also has impressive abilities in the environmental sector.

Windrowing will not decrease the volume of litter by any significant amount. Only a small amount of time is actually spent composting and it will not be long enough to affect the volume. You will eventually have to remove some litter when it gets too deep (more than six to eight inches). Windrowing does appear to benefit average or below average growers more than top growers. The reduced pathogen load in the litter appears to be the main benefit. However, this pathogen reduction in litter is beneficial to everyone (above or below average).

Summary

Reusing broiler litter to grow multiple flocks is a common practice that has both benefits and challenges. If litter can be kept dry, paw quality is generally better on reused litter than on new bedding. Reusing litter can also save money by preventing or delaying the expense of purchasing new bedding material if/when the houses are cleaned out.

Litter treatments can be used to help manage ammonia levels during the brood period of a flock. Windrowing reused litter is a sound management practice that, when done correctly, is beneficial and can reduce the pathogen load in reused litter. However, using litter is not without challenges. There is greater potential for high ammonia levels with built up litter vs. new bedding material. Ammonia is a serious animal welfare and economic threat to the poultry industry and must be managed as such. Litter treatments are acidifiers, and growers should follow manufacturers’ recommendations, guidelines and precautions for their safe use and handling. Windrowing litter requires both time and expertise. In addition, it is dirty work that may require personal protective equipment such as a mask, respirator, goggles, etc. Although, most of the challenges can be overcome, and the advantages of using reused litter tend to outweigh the disadvantages. Proper litter management is critical to success, regardless of whether we are talking new bedding material or built up litter.

Ecodrum™ is the leading supplier of in-vessel mortality composting equipment. Since 2007, poultry producers have relied on Ecodrum™ composters to dispose of their mortality in a cost-effective and environmentally sensitive manner.

Benefits:

- No Expensive Electric Bills
- Neighbor Friendly
- True Bio-Security
- No Invasive Trucks

Contact us:
(701) 446-6139
@ecodrumcomposter
www.ecodrumcomposter.com
Thursday, April 11, 2019
9 a.m. to 3 p.m.
SMITH COUNTY AG COMPLEX
Highway 35 South, Raleigh, Mississippi

SPONSORED BY
Mississippi State University Extension Service
Community Bank
First Financial Bank
MPA POULTRY MANAGEMENT SCHOOL
MAY 7 & 8, 2019
COLLEGE OF VETERINARY MEDICINE
STARKVILLE, MS

Everyone’s Invited . . . So Get Ready To Register

The MPA Poultry Management School is scheduled for May 7th and 8th at the College of Veterinary Medicine at Mississippi State University.

We will begin at 1:00 p.m. on May 7th, finish up the first day around 4:30 pm and then head out the VFW for some hospitality time. Crawfish and other foods will be served. There will be buses running to take you to the VFW and back to your hotel.

The next morning, May 8th we will begin at 8:00 a.m. and finish up at the Vet School and head over to the Poultry Science Department around noon with a great lunch sponsored by First South Farm Credit.

MPA POULTRY MANAGEMENT SCHOOL
WEDNESDAY, MAY 7, 2019
11 00 A.M. REGISTRATION - CVM LOBBY
1:00 - 4:30 P.M. GENERAL SESSION – MAIN AUDITORIUM

Pic Billingsley - MPA CHAIRMAN OF BOARD PRESIDING

1:00 - 1:30 REO Gone Rogue: A Case Investigation
Dr. Natalie Armour, MSU CVM PRDL

1:30 - 2:30 Habits of Highly Effective People
Gail Stickney, Tyson Foods

2:30 - 2:45 BREAK - Sponsored by Cobb-Vantress, Inc. & International Paper

2:45 - 3:45 What’s Next in Dealing with Aggressive Animal Rights Tactics
Will Coggin, Center for Consumer Freedom

3:45 - 4:30 Communicating with Diverse Groups
Gabriella Davis, MMESC Director, Mississippi Migrant Education Center

4:30 - 4:45 BOARD BUSES TO GO TO THE VFW

5:00 HOSPITALITY TIME Crawfish Boil and Barbeque
Sponsored by: Allied Industry
VFW of Starkville, Old Highway 25.

THURSDAY, MAY 8, 2019
7:30 - 11:00 A.M. REGISTRATION - COLLEGE OF VET MEDICINE
Assorted pastries and biscuits will be served.

8:00 - 9:00 FSIS Expectations Related to Live Production
Dr. Ashley Peterson, NCC

9:00 - 9:30 Current Animal Health Topics in Mississippi
State Veterinarian Dr. Jim Watson and Staff

9:30 - 10:00 BREAK – Sponsored by Cobb-Vantress, Inc. & International Paper

10:00 - 11:00 Animal Welfare Today & Tomorrow
Roy Mutimer, Cobb-Vantress, Inc.

11:00 - 11:30 Necrotic Enteritis Lessons Learned the Hard Way
Dr. Tim Cummings, Zoetis

12:00 LUNCH Sponsored by First South Farm Credit
SERVED AT MSU POULTRY SCIENCE DEPT.

REGISTRATION FORM

Name___________________________________________________ Company ____________________________________________
Address________________________________________________ City ___________________ State _______ Zip ________________
Phone___________________________________________ Email__________________________________________________________

Riding the bus to the Crawfish Boil _______, please check if you will be riding.

You may go online to www.mspoultry.org and register and pay through PayPal.

Registration Fee $125.00 per person for members, $150.00 per person for non-members, and free to MPA Grower Members. Due to Contractual obligations, MPA cannot refund registration fees after May 1, 2019. Make checks payable to MPA or call the MPA office (601) 932.7560 with credit card info. Checks must accompany your registration forms. Mail to: MPA, 110 Airport Road South, Suite C, Pearl, Mississippi 39208.
YOUR POULTRY GENERATOR SOLUTION

It may take a large investment to protect your small one.

POULTRY FARM FINANCING SPECIALISTS

PROUDLY SERVING NORTH MISSISSIPPI
CLARKSDALE • CLEVELAND • CORINTH • SENATORIA • STAREVILLE • TUPELO
INDIANOLA • KOSCIUSKO • LOUISVILLE • NEW ALBANY

www.MSLandBank.com • Toll Free 866.560.9664 | MissionCriticalPower.com
At the top of the ballot in this year’s state elections will be two hotly contested primaries for governor. Five of the eight statewide positions are open, drawing a host of candidates.

In the eight statewide positions and the three districts for Public Service and Transportation commissions, Democrats and Republicans fielded candidates in all but one race each.

Fourteen candidates qualified to run for Governor. In the Republican primary, Lt. Gov. Tate Reeves, who is term-limited, faces former Supreme Court Chief Justice Bill Waller, Jr. and first-term Representative Robert Foster of Hernando. Reeves has served as treasurer for eight years and then lieutenant governor for eight. Waller was on the Supreme Court for 21 years.

In the Democratic primary, there are nine candidates led by four-term Attorney General Jim Hood of Houston. He faces Robert Schuler Smith, Hinds County district attorney. Hood prosecuted Smith three times for conspiracy to hinder prosecution. Another Democrat who qualified is Phillip West, a former state Representative and mayor of Natchez.

The winners of each of these primaries will face two other candidates in the Nov. 5 general election. David Singletary, a former state Representative and mayor of Natchez, will face Robert Schuler Smith, Hinds County district attorney. Hood prosecuted Smith three times for conspiracy to hinder prosecution. Another Democrat who qualified is Phillip West, a former state Representative and mayor of Natchez.

In the Central District, the retirement of Dick Hall, the longest serving statewide official currently in office has two Republicans and two Democrats vying to replace him. After 24 years in the Legislature, Hall was appointed in 1999 by Gov. Fordice to a vacancy on the Commission. Seeking to replace Hall are Butch Lee, the Republican mayor of Brandon who faces one primary opponent as does Senate Highways and Transportation Committee Chair Willie Simmons, D-Cleveland.

In the next Emerging Trends we will look at legislative races around the state.
The 5090EL features a low stance and is built on the rugged John Deere 5E 4-cylinder tractor platform. With an overall height of only 69 inches and 90 engine horsepower, it fits easily through small doors like those found in poultry houses or horse barns and has plenty of power to pull a variety of implements.

A lowered ROPS hinge point and factory-installed horizontal side exhaust on the 5090EL help minimize tractor height. Depending on the application, the 5090EL can be equipped with either R4 industrial or R1 agricultural tires.

"A John Deere PowrReverser™ Transmission lets operators change direction without clutching – making the 5090EL very user friendly and ideal for loader work. The built-in versatility these tractors offer make them a great choice to handle common hay and livestock jobs around the farm.

The 5090EL is backed by a John Deere 2-year or 2,000 hour comprehensive factory warranty, and a 5-year or 2,000-hour powertrain warranty.

www.AgUp.com
Each year, the United States Department of Agriculture makes projections for various commodities for the next decade. In February, the USDA released its “USDA Agricultural Projections to 2027” and the long term view for the poultry industry is steady but positive. Below are some of the charts and the poultry sections of the report.

**Feed Prices**

“Despite nominal gains, rising inflation over the projection period causes a modest drop in real prices for corn and soybeans while the real wheat price remains relatively stable through 2027.”

(U.S. farm-level prices: Corn, soybeans, and wheat)

**U.S. Production**

“Favorable returns at the start of the projection period and robust demand provides incentives for continued growth of the U.S. livestock sector over the next ten years.”

(U.S. red meat and poultry production)

**Broiler Prices**

“Broiler prices in the next decade are expected to be relatively stable following a substantial increase in 2017. The feed price ratios that result from stable broiler prices and moderate feed costs remain favorable for the continued expansion of broiler production. Larger numbers of birds and higher average broiler slaughter weights are also expected to contribute to broiler production growth...After an initial decline, nominal broiler and hog prices generally increase over the next decade as population growth and export demand are both expected to continue to grow.”

(U.S. Livestock prices, nominal)

**Poultry Exports**

“U.S poultry (including broilers, turkey, and mature chickens) exports are expected to grow over the next ten years. Export growth is faster in the first part of the projection period in part due to the continued recovery from the decline associated with avian influenza that took place in 2015. The United States is expected to retain its position as second largest exporter of poultry after Brazil while the EU remains a distant third, exporting roughly one-third of U.S. levels. While almost 80 percent of all exports come from 3 countries, imports are much less concentrated.”

(U.S. meat exports)
Coverages available for:

- All Poultry Operations
- Farm Equipment
- Water Wells (above & below ground coverage)
- Liability coverage (included)
- Replacement Cost for Generators
- Enhanced Loss of Income Options
- Replacement Cost for Tractors (up to 5 years old)
- Home, Auto, and Farm Package Available

Payments can be made:

- Monthly
- Annually

To learn more about Joiner Insurance, Inc. visit:

www.joinerins.com

Like us on Facebook
Imports: Who’s Buying Chicken?

“Annual poultry meat imports by the major importing countries are projected to increase by 3.1 million tons (29 percent), reaching just over 13.9 million tons by 2027. Substantial growth is expected from emerging market nations in Sub-Saharan Africa, Middle East, Latin America, and Asian region. This includes countries such as Mexico, Saudi Arabia, Iraq, Philippines, and China. A decline in poultry meat imports is projected for Russia; slow import growth is projected for Japan, Canada, and the EU.”

Two Mississippi State University graduate students working with poultry science professors on research received the 2018 Southern Ag Credit travel grant. Courtney Ennis won $1,000 and Andrew Brown won $500 to equal $1,500 donated to the Mississippi Poultry Foundation by Southern Ag Credit. This is the third year Southern Ag Credit has funded the scholarship. The grant is used to travel to present their research results at the International Poultry Scientific Forum held in January and February during the International Production and Processing Exposition in Atlanta.

Graduate and undergraduate students present and compete for awards of excellence. Sessions for talks and posters include Metabolism & Nutrition, Physiology, Environment & Management, Processing & Products, Pathology, and SCAD. For 2018, over 300 abstracts were submitted and accepted. Attendance is generally around 1200-1400, with many international speakers and attendees.

Courtney Ennis is one of the recipients of the 2018 Southern Ag Credit Scholarship. She is a Poultry Science Ph.D. student at Mississippi State University working with Dr. Kelley Wamsley.

Phytase and carbohydrases are exogenous enzymes that are commonly incorporated into commercial poultry diets to release nutrients bound by antinutrients and reduce feed costs. The objective of this study was to determine the optimal inclusion of these commercially available enzymes (singular or combined dose) and determine their effects on male broiler performance and processing.

The dietary treatments tested included either a regular or a super-dose of phytase with either carbohydrase 1, carbohydrase 2, or both carbohydrase 1 and 2 combined. Day 0-55 live performance was improved with the inclusion of carbohydrase 1. Additionally, processing improvements (carcass and tender yield) were observed in birds fed superdosed phytase. This research provides the poultry industry with insight into effective enzyme strategies to enhance commercial broiler production and economic gain.

Andrew Brown is the other recipient of the 2018 Southern Ag Credit Scholarship. He is a Poultry Science masters student at Mississippi State working with Dr. Kelley Wamsley.

For this study, birds of two commercial strains were fed two feed forms (crumbles or pellets) with varying feed qualities. They determined the average particle size placed and consumed for each day for each pen of broilers to evaluate the average feed particle size consumed from 0-18 days. This research established that high yielding chicks consumed a larger average particle size of feed as compared to fast growing chicks from 0-6 days (2500 vs 2200 microns). Ultimately, the results demonstrate that chicks select the larger particles of feed, are able to consume a pellet, and this translates to improved performance.
We’ll keep your farm’s lights (and a whole lot more) on.

POULTRY HOUSE ELECTRICAL
CONTROLLER SYSTEM DESIGN & INSTALL
REGULAR MAINTENANCE
SITE PREPARATION

RANDY GAINEY OWNER, PRESIDENT
GAINEYSELECTRIC.COM
601.938.6204 | 24HR SERVICE

YOUR POULTRY LOAN EXPERT

- New Construction
- Purchase
- Refinancing
- Facility Improvements
- Expansion
- Real Estate

First State BANK

301 S Court Street | Ellisville, MS 39437 | OFFICE 601-477-9490
CELL 601-624-9278 | NMLS #415383 | jswindle@firststatebnk.com

JAY SWINDLE
Senior Vice President | Lending
It all started almost 30 years ago. In 1991, former farmer Randy Gainey decided to pursue his dream of starting up an electrical business. Since that time, Gainey’s Electrical Service has performed electrical work in all parts of Mississippi and in portions of Alabama and Tennessee.

Gainey’s expertise covers all types of electrical service and specializes in agricultural barn wiring. This includes poultry and hog barns, generators and compost sheds, wiring barns and chicken houses, as well as performing site preparation for the external framework of new structures.

As electrical experts with a farming background, Gainey’s understands the pressures and expectations Mississippi farmers face. Randy’s standard of excellence is matched by the enthusiasm and expertise of his family and team—wife Angie, daughter Chelsea, and son and right-hand man Skylar. The Gainey’s are first and foremost a family team, dedicated to providing quality service, and being a local name Mississippians can trust.

Gainey’s installs alarms, video systems, controllers for poultry houses and is the leading provider in Mississippi for the system design, installation, and maintenance of industry-standard Rotem controllers. Each control system is hand-built by a Gainey’s technician and controls all different functions of a poultry house. These functions include feed, water and ventilation, and alarm systems. With this technology, owners can monitor their house remotely using a smartphone or computer. After installing the controllers on painted boards and pre-wiring them, Gainey’s carefully transports them on an enclosed trailer to the farm for installation. The precision of the wiring demonstrates the attention and care that are hallmarks of Gainey’s service.

With quick turnaround and annual follow-up inspections, Gainey’s delivers honest, well-done service that you can bank your farm’s livelihood on.

OUR LOCAL TEAM IS HERE TO LEND YOU OUR EXPERTISE

If you’re ready to make a major purchase, our poultry specialists are ready to work!

- Decades of poultry lending experience.
- Excellent loan options available for constructing, purchasing and refinancing all types of houses or farms.
- #1 in Mississippi in loan volume by the Small Business Administration.

COMMUNITY BANK

BEBE WILLIAMS
Senior Vice President
601.649.5770
NMLS #415388

CORY RAWSON
Senior Vice President
601.649.1611
NMLS #409191

Got the Chicken House Blues?

PICKET FENCE REALTY

- Poultry Farms Specialist
- Allied Member, Mississippi Poultry Association

601.506.3350

LONGEST STANDING POULTRY FARM BROKERAGE IN MISSISSIPPI
15 YEARS EXPERIENCE!

Follow me on Facebook “Mississippi Chicken Farms”

John Alumbaugh, Broker  |  601.506.3350  |  john@6015063350.com  |  picketfencesrealty.com
On February 7, Democratic lawmakers formally launched, through House and Senate resolutions, a long political push to enact a “Green New Deal” (GND) over the next ten years to transition to “clean” and “zero-emissions” energy. The resolutions outlined broad principles for the initiative, including ambitious goals for cleaning up energy production and infrastructure, with careful wording that allows flexibility for defining which energy resources deserve federal support. The GND also seeks to provide a fresh rallying cry for opposing the Trump Administration’s climate policy rollbacks, calling for the federal government to account for the complete environmental and social costs of emissions through existing laws and new programs.

GND’s goals are irrational…and downright scary
GND has recently been described as “likely the most ridiculous and un-American plan that’s ever been presented by an elected official to voters.” Over the next ten years, GND seeks to achieve the following goals, as described by David Harsanyi, Senior Editor of The Federalist:

1. **Ban affordable energy.** GND calls for the elimination of all fossil fuel energy production, the lifeblood of American industry and life, which includes not only all oil but also natural gas — one of the cheapest sources of American energy, and one of the reasons the United States has been able to lead the world in carbon-emissions reduction.

2. **Eliminate nuclear energy.** The GND also calls for eliminating all nuclear power, one of the only productive and somewhat affordable “clean” energy sources. This would purge around 20 percent of American energy generation.

3. **Eliminate 99 percent of cars.** The authors state that the GND would like to replace every “combustion-engine vehicle” — trucks, airplanes, boats, and 99 percent of cars. Charging stations for electric vehicles will be built “everywhere,” though how power plants will provide the energy needed to charge them is conveniently unaddressed.

4. **Gut and rebuild every building in America.** GND wants to “retrofit every building in America” with “state of the art energy efficiency.” That includes every home, factory, and apartment building.

5. **Eliminate air travel.** GND calls for building out “high-speed rail at a scale where air travel stops becoming necessary.”

6. **A government-guaranteed job.** GND promises that the United States government will provide every single American with a “family-sustaining wage, family and medical leave, vacations, and a pension.”

7. **Free education for life.** GND promises free college or trade schools for every American.

8. **A “healthy food” diet.** The GND promises the government will provide “healthy food” to every American.

9. **A house.** The GND promises that the government will provide, “safe, affordable, adequate housing” for every American citizen.

10. **Free money.** The GND aims to provide “economic security” for all who are “unable or unwilling” to work.

11. **Bonus insanity: Ban meat.** One of the leading proponents of GND, New York Rep. Alexandria Ocasio-Cortez admits that we can’t get zero emissions in 10 years “because we aren’t sure that we’ll be able to get rid of farting cows and airplanes that fast.” The only way to get rid of farting cows is to get rid of beef.

http://thefederalist.com/2019/02/07/ten-most-insane-requirements-green-new-deal/

Agricultural industry reactions to GND
Agricultural meat industry groups are reacting to attacks by GND supporters, such as the statement made on February 12 by Democrat presidential hopeful, Sen. Cory Booker (D-NJ), that Americans must eat less meat and the industrial meat complex isn’t sustainable. One of these groups, the National Cattlemen’s Beef Association’s Center for Public Policy, recently reacted to the GND by releasing its new “Cost/Benefit Principles”. These are intended to guide its decision-making process on various policy proposals, including GND and other climate change programs. Colin Woodall, NCBA Senior Vice President, Government Affairs, summarized the purpose of these Principles: “What specifically are you proposing, how much will it cost, how much will it affect global temperatures down the road, and how did you arrive at those numbers? Seems like anyone who is proposing billions or trillions of dollars’ worth of policy changes should be happy to answer those questions. Yet for some reason, few currently are.”

Republican political reaction to GND
President Trump and top Republicans have been increasingly eager to attack GND, including its call for “zero carbon” power or for greenhouse gas cuts in multiple sectors, in an effort to brand Democrats as extreme or quash any momentum behind the plan. In a preview of possible attacks on GND, the President stated in a February 11 campaign rally in El Paso, Texas: “I really don’t like their policy of taking away your car, or taking away your airplane flights… You’re not allowed to own cows anymore.”

Congressional Republicans are unified in their opposition to the GND, as exemplified by the comment of House Science Committee ranking member, Frank Lucas (R-OK), at the committee’s February 13 hearing on climate science: “We won’t succeed with pie-in-the-sky policies that demand 100 percent renewable energy at the expense of reliable power from nuclear and fossil fuels and raise energy prices for businesses and consumers.” Senate Republicans are likewise ramping up their criticism of the GND, with Majority Leader Mitch McConnell (R-KY) pledging on February 12 to hold a floor vote on the resolution: “I’ve noted with great interest the Green New Deal, and we’re going to be voting on that in the Senate to give everybody an opportunity to go on record.” Senate Environment Committee Chairman, John Barrasso (R-WY), argued in a February 12 floor speech that GND is “less about climate change more about putting government in control of every facet of our lives.” He called GND “so far outside of America’s mainstream that it’s scary.”

If you have any question about this article are any other issue relating to the Green New Deal resolution, please feel free to contact the author, John Milner of Brunini Law Firm in Jackson, who is MPA Counsel.
With over 200 years of experience in poultry lending, our loan officers will work with you one-on-one to finance your poultry operation. You won’t talk to dozens of people, just one experienced loan officer who’ll be with you every step of the way.

www.ffb1.com  888.677.7703

FIRST FINANCIAL BANK
America’s Premier Poultry Lender
STARKVILLE, Miss — Mississippi State University and Alcorn State University are partnering to launch a dual-degree program that will prepare more leaders for the state’s top agricultural industry.

On Thursday [Feb. 21], MSU President Mark E. Keenum and ASU Interim President Donzell Lee signed a memorandum of understanding to establish the program that will allow students to earn bachelor’s degrees from both universities. Students can complete 91 hours toward an ASU Bachelor of Science in Agriculture Science with a focus in animal science and then transfer to Mississippi State to complete the remaining 31 hours in coursework for an MSU Bachelor of Science in Poultry Science. Upon completion of the MSU coursework, students will graduate from both institutions with dual degrees.

Keenum said the new program will provide a range of benefits for both students and the poultry industry, the state’s largest agricultural enterprise topping $3 billion in farm gate value last year alone.

“This is an opportunity for two leading land-grant institutions to work together to prepare even more professionals and leaders for one of our state's most important industries,” Keenum said. “Mississippi State offers one of only six poultry science programs in the nation, and our graduates have a 100 percent job placement rate, with many of them considering multiple offers.”

Lee said this partnership is a great opportunity for both institutions.

“I am delighted about the partnership,” Lee said. “Working together, ASU and MSU will have a great impact on one of the largest industries in the state by creating a pipeline of competent individuals who can jump right into leadership positions.”

Mary Beck, professor and head of the MSU poultry science department, said the partnership extends the university’s academic outreach in the state and meets the needs of Mississippi’s largest agricultural commodity.

“The main goal of this program is to expand opportunities for students with regard to career options,” she said. “The poultry industry employs more than 28,000 people directly and another 27,000 indirectly. Having a degree in poultry science from Mississippi State and a degree in agricultural science from ASU ensures the industry will continually have a skilled workforce.”

Marketing the program at Alcorn State is the first step for program administrators this spring, and the colleges hope to start gaining students to the program by fall 2019. Students in the dual-degrees program will apply to MSU as transfer students and meet admission requirements. A component of the MSU curriculum includes a summer internship at a poultry processing plant.

Alcorn State University Interim President Donzell Lee, seated from left, and MSU President Mark E. Keenum signed a memorandum of understanding Thursday [Feb. 21] to establish a program that will allow students to earn bachelor’s degrees from both universities.

Looking on are ASU Interim Provost and Vice President for Academic Affairs John Igwebuike and MSU Provost and Executive Vice President Judy Bonner.
CAN YOU SEE THE COST OF AMMONIA?

It may be invisible, but research shows ammonia creates costly challenges at levels as low as 25 PPM.

Control ammonia to boost performance, meet welfare requirements and support environmental demands. Only Jones-Hamilton’s litter management experts and our industry-leading litter treatment, PLT®, has a 25-year history of eliminating ammonia’s costly challenges.

Get focused. Apply PLT®. Gain profit.

Only EPA Safer Choice litter amendment

www.JonesHamiltonAg.com
Introduction

The proper management of the fertile egg is crucial for the control of any infectious agent of vertical or horizontal transmission. Specially, it is of vital importance for all those agents transmitted via feces, dust or moisture such as *Pseudomonas aeruginosa*, *Salmonella* sp., *Escherichia coli*, *Proteus* sp., *Enterococcus faecalis*, *Enterococcus cecorum*, *Clostridium perfringens*, and *Campylobacter* sp. among others.

For a company interested in the control of important bacteria in poultry such as *Salmonella* sp. and *Pseudomonas aureginosa*, it is essential to avoid the external contamination of the egg. Intermittent fecal excretion of *Salmonella* and the presence of *Pseudomonas aureginosa* in moisture could lead to the contamination of numerous materials promoting bacterial persistence in the chicken house. Consequently, the presence of these bacteria in the breeder farm environment becomes an important factor in their persistence within a vertically integrated operation. Because ensuring bacteria-negative fertile eggs become bacteria-negative chickens control of bacteria requires a holistic approach. Interventions must be made throughout all the integration looking for the reduction of bacteria loads in the chickens and in the chicken meat. These interventions not only will have an effect on the decrease of *Salmonella* and *Pseudomonas*, but also will contribute to the decrease of other pathogens.

The egg’s natural defenses can prevent bacterial invasion. But it is important to understand these defenses have a limit and may be insufficient when the bacterial contamination is excessive. This leads to the question of what can be done to decrease the chance that the fertile egg gets contaminated with bacteria. Many think that external disinfection of the egg may be the solution. Others consider that this additional manipulation would inhibit development of the embryo. The truth is that like other bacterial control interventions, the disinfection of the fertile egg should only be seen as one of the many actions that could be implemented to reduce the prevalence of pathogenic bacteria in a vertically integrated operation.

Integral management must be carried out, starting with the correct management of the breeders. In the specific case of dirty eggs (laying on the floor), external disinfection cannot eliminate internal contamination that occurs once the egg gets in contact with feces or contaminated materials in the chicken house. The correct handling of the fertile egg in the breeder farm is essential.

External characteristics of the egg: “the defense arsenal”

The presence of antibacterial protection is crucial for embryonic development. A freshly laid fertile egg would be free of bacteria on the inside when the breeders are healthy, and the eggs are handled correctly. The egg has multiple defenses: external membrane or cuticle, shell, shell membranes, and albumen (egg white). All of these have important roles in egg protection (Table 1). However, some situations can contribute to the shell contamination such as eggs subjected to warm temperatures, moisture, excessively contaminated chicken house environment, contact with feces, contaminated nesting material, dust, contaminated feed, and infected farm workers. The chance of bacterial contamination increases with the extent of contact with contaminated material (e.g. fertile egg on the floor). Bacteria would be able to penetrate the egg and overcome the egg’s defenses. If bacteria get to the yolk, they can multiply very quickly in a short period. Yolk is highly susceptible to bacterial contamination and is extremely rich in various nutrients bacteria require for multiplication and survival (Figure 1).
When a healthy hen lays an egg, its content would be bacteria-free. Although the egg’s biological structure provides good defense against bacterial contamination, it is still possible for bacteria to pass through the shell into the egg’s content (trans-shell contamination or horizontal transmission). As an example, bacteria from the *Proteus* and *Pseudomonas* groups are commonly found on the surface of the egg shell. Through trans-shell contamination they can get inside the egg. Their growth is characterized by the production of gas. Since the shell membranes apparently become impermeable, the pressure created within the egg is often enough to burst the shell and scatter the egg’s contents. These are the exploding eggs or “bombs” causing horizontal contamination during incubation.

How bacteria “invade” the egg

- **Broken barriers:**
  Bacterial contamination of the egg would occur in the ovary or in the oviduct (vertical transmission), or when the egg is laid and gets in touch with bacteria present in the environment (horizontal transmission). An egg can easily get contaminated with bacteria if the cuticle is not present or if the shell is partially broken.

- **Trans - shell penetration**
  When a hen is laying an egg, its body temperature could be around 41°C (or 105°F). This means that the eggs are very warm at the time they are laid. The warm egg cools to the environmental temperature. As a consequence, the content of the egg contracts producing a vacuum, and air is drawn through the pores present in the shell. Such contraction tends to form a negative pressure within the egg. Bacteria present in the environment or on the egg surface can then be pulled into and through the eggshell and its membranes. This mechanism is known as trans-shell penetration.

Numerous studies established that the eggshell can be penetrated by bacteria when water or some other liquid is present, especially if there is a temperature differential between the egg and the liquid. This mechanism is used by bacteria such as *Salmonella* and *Pseudomonas* to penetrate the egg almost immediately when the egg gets in touch with contaminated chicken feces. It is important to highlight that it takes at least 60 seconds for the solid cuticle to plug the shell pores. Sixty seconds is more than enough time for one bacterial cell to penetrate the egg.

- **Bacteria size and shell pores**
  As mentioned above, translocation of bacteria across the shell is a key stage in the egg bacterial contamination. According to Berrang et al., water and a temperature difference between it and the egg is a common cause of translocation since the contraction of a warm egg in cold water sucks bacteria through the pores in the shell. It is possible because of the bacteria and pores size, too.

### Table 1: Fertile egg defenses and their function against bacteria

<table>
<thead>
<tr>
<th>Egg’s defense</th>
<th>Function against bacteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cuticle</strong></td>
<td>First physical barrier</td>
</tr>
<tr>
<td></td>
<td>Natural protective coating, outermost layer of the entire shell.</td>
</tr>
<tr>
<td></td>
<td>Sixty seconds after egg laying, cuticle dries sealing the passage of gases, dust, and bacteria. By blocking the pores, the cuticle helps to prevent microbial contamination of the egg contents.</td>
</tr>
<tr>
<td><strong>Shell</strong></td>
<td>Second physical barrier: first true line of defense against bacterial contamination</td>
</tr>
<tr>
<td></td>
<td>Eggshell is made almost entirely of calcium carbonate (CaCO₃) crystals. This characteristic provides an efficient physical defense to the egg content against bacterial invasion. Covered with more than 10,000 pores. Semipermeable layer allowing the exchange of gases (taking out carbon dioxide and providing oxygen to the embryo), and moisture through the eggshell pores.</td>
</tr>
<tr>
<td><strong>Outer and inner shell membranes</strong></td>
<td>Third physical barrier: Second line of defense against bacterial contamination.</td>
</tr>
<tr>
<td></td>
<td>Lying between the eggshell and albumen. Strong layer made partly of keratin. Provide efficient defense to the egg content against bacterial invasion. Prevent moisture from leaving the egg too quickly.</td>
</tr>
<tr>
<td><strong>Albumen – “egg white”</strong></td>
<td>Chemical and physical barrier against bacterial contamination – Albumen complements the physical protection insured by the eggshell.</td>
</tr>
<tr>
<td></td>
<td>Egg albumen is considered to be an unfavorable medium for microbial growth. It has numerous characteristics to accomplish this objective:</td>
</tr>
<tr>
<td></td>
<td><strong>Several antimicrobial proteins</strong>: four alternating layers of thick and thin albumen contain approximately 40 different proteins and water. All combined albumen components make it a very important fertile egg defense mechanism. Albumen has both bacteriostatic and bactericidal proteins depending on the types of bacteria and on the conditions of egg storage temperature and duration:</td>
</tr>
<tr>
<td></td>
<td>1. Bacteriostatic proteins - prevents bacterial growth: Ex. Ovotransferrin (iron chelation, bacteria need it but cannot use it), and avidin.</td>
</tr>
<tr>
<td></td>
<td>Recently, other albumen proteins have been identified (e.g. OVAX and AvBD11) as having a very important role against Gram-positive bacteria such as <em>Staphylococcus aureus</em>, and Gram-negative bacteria such as <em>Salmonella sp.</em>, and <em>Escherichia coli</em>.</td>
</tr>
<tr>
<td></td>
<td>Intrinsic properties that are generally unfavorable for bacterial multiplication and dissemination: temperature and pH are bacteria growth limiting factors in the albumen</td>
</tr>
<tr>
<td></td>
<td>1. Albumen pH: modulates the activity of antimicrobial proteins. It is close to neutrality at oviposition. As the egg ages, the pH increases from neutral (which is good for bacterial growth), to alkaline (pH of 10 is not good for <em>Salmonella</em> growth and survival inside the egg).</td>
</tr>
<tr>
<td></td>
<td>2. Viscosity: it has a significant role regulating the bacterial diffusion, because of the inhibition of the bacteria cell motility and the restriction of the bacteria migration towards the yolk.</td>
</tr>
<tr>
<td></td>
<td>3. Temperature is crucial in controlling bacterial growth in eggs: the antimicrobial activity of ovotransferrin is higher at incubation temperatures (34-36°C) than at ambient temperatures.</td>
</tr>
<tr>
<td><strong>Chalazae</strong></td>
<td>Opaque support of the albumen. Holds the yolk in the center of the egg, attaching the vitelline membrane</td>
</tr>
<tr>
<td><strong>Vitelline membrane</strong></td>
<td>Clear covering surrounding the yolk. Protects the yolk from breaking. Integritity of the vitelline membrane prevents the leakage of the yolk contents in the albumen.</td>
</tr>
<tr>
<td><strong>Yolk</strong></td>
<td>Since the yolk is the major source of nutrients in the egg, it can serve as an ideal culture media for bacteria. Once bacteria enter the yolk, they would grow and cause contamination.</td>
</tr>
</tbody>
</table>
The pores of the shell are much larger than some bacteria. Therefore, if the eggs are laid in dirty nests on the floor, they can absorb quantities of bacterial cells. Salmonella bacteria are generally 2–5 microns long by 0.5–1.5 microns wide; Pseudomonas aeruginosa is a rod about 1-5 µm long and 0.5-1.0 µm wide. Since most of the egg pores sizes range from 1 to 10 µm, it could be easy for both of these bacteria to go through the egg shell pores if the conditions are favorable for bacterial penetration.

Frequently, the presence of bacteria is confined to the shell membranes. Confinement is followed by the sudden onset of multiplication resulting in gross contamination. The mechanisms that trigger the sudden onset of bacterial multiplication have not been defined precisely. Some studies suggest that bacteria may begin growth, slowly attack the shell membranes, and, eventually reach the albumen. After that, subsequent bacterial growth takes place relatively quickly. How bacteria can grow if the albumen is a very unfavorable medium for microbial growth must be addressed. However, quantity of bacteria in the chicken house must be considered important. **High bacterial loads are most likely the most important source for external egg contamination.**

*Area of egg most likely to be penetrated*
Numerous studies showed that in the case of Pseudomonas aeruginosa, the air cell end is most prone to penetration when challenged by a temperature differential immersion.

*Fertile egg-handling production stages vs. bacterial contamination*
According to Berrang et al., any production stage with moisture and the presence of bacteria provides an opportunity for bacterial invasion. Special attention must be paid to the factor of a positive temperature differential (egg warmer than the environment), because there is an increased chance of bacterial attack. Aviagen (Egg storage and sweating) highlights that when eggs are moved out of the farm egg storage to the hatchery, or when eggs are moved from the hatchery egg storage to begin incubation there is a high risk of water condensation on the eggshell. This is called egg ‘sweating’. When the surface of the egg becomes wet there is a high risk of bacteria on the shell surface passing through the pores and causing contamination and exploding eggs during incubation. In summary, ten common production stages to eggs getting bacterial contamination are:

1. Bacterial contaminated nest box shavings
2. Eggs laid on floor
3. Chicken house dusty environments
4. Eggs in contact with bacteria in the first 60 seconds after lay (before the cuticle hardens and effectively caps the pores)
5. Incorrect temperature control – temperature fluctuations
6. Condensation of moisture from the air over the egg – “sweating egg”
7. People infected with bacteria handling fertile egg
8. Egg handling with dirty hands
9. Bacterial contamination in egg classification area
10. Contaminated crates and high bacterial presence in vehicles.

**What to do to decrease fertile egg contamination with bacteria?**

- Prevent contamination during production and when handling fertile eggs to prevent initial loads of bacteria.
- Temperature of the egg must be strictly controlled after laying.
- Good sanitation in all areas related with egg handling and egg storage.
- Prevent cross-contamination by encouraging good employee hygiene practices and strict area sanitation. Use clean and disinfected equipment for transportation. Vehicles for egg transport must be clean and disinfected.
- Correct nest management:
  1. Make sure the number of nests is enough. When the number of nests is insufficient, hens will lay on the floor.
  2. The nests should not be too dark, or too hot. Hens must feel comfortable.
  3. Pullets must be accustomed to the perches before their transfer to the breeders farm.
  4. Nest environment must be clean, free of bacteria and chemical contaminants.
  5. Avoid the excessive manipulation of fertile eggs.
  6. Egg collection belts must be clean.
  7. Frequently check nest pad condition and function.
  8. Nests should be closed at night to keep the hens out and the nest pads clean.
  9. Prevent insect hiding places in the nests. Implement frequent red mite control.
  10. Prevent rodents going inside the nests. Implement frequent rodent control.

**Disinfection of the fertile egg: Is this a process that must be performed routinely?**
Fertile egg disinfection is a process that can diminish the bacterial loads of the shell. When done properly, it contributes to the reduction of contamination of the hatchery and therefore of the day-old chick. The decision to
Your Farm **Starts** at the Kitchen Table

We know your business and will travel nationwide to discuss your financing options. Contact one of our loan specialists to get started, or visit liveoakbank.com/MSPoultry

© 2018 Live Oak Banking Company. All rights reserved. Member FDIC.

**BILL PATRICK**

Realtor® | Land Specialist
Mississippi Poultry Association Member

Bill is a member of the Mississippi Poultry Association, Realtor's Land Institute and is a Licensed Realtor® in the state of Mississippi. He specializes in land and poultry farms and truly has a passion for assisting his clients.

Call Bill today if you are interested in selling your property, or if you are looking for additional property to purchase. If anyone is qualified to help you buy or sell your property, it’s Bill Patrick.

601.573.0749 (cell) | 601.898.2772 (office)
Bill@TomSmithLand.com

TomSmithLandandHomes.com

Bill Patrick

Tom Smith Land and Homes
disinfect the fertile eggs should be made by each company depending on the knowledge of their sanitary status and the process that is carried out with the fertile egg.

Disinfection is not the only intervention that must be implemented to obtain a fertile egg of good quality. In fact, this quality depends largely on the sanitary, nutritional and management status of the breeder. In farms of grandparents and breeders, the condition of the litter and the area where the post-harvest eggs are handled directly influences the contamination of the shell. Another aspect that is often not adequately controlled is the health status of the farm and hatchery workers, their hygiene practices, and hand washing and disinfection before, during and after handling the fertile egg.

The fertile egg to be disinfected would be one with an excellent external quality, optimal condition of the shell (without cracks or breaks), with no more than a slight contamination (less than 10% of its surface). However, this 10% of shell contamination can already be the source of internal contamination (trans-shell contamination).

Gas disinfection - “gassing”. This is a dry disinfection that will be effective if it is carried out under adequate conditions. Disinfection of the fertile egg must be carried out as soon as possible. The best results for gas disinfection are obtained when eggs of optimum external quality are disinfected. Gassing presents lower risks of environmental contamination, does not produce discharges; but it must be carried out under strict industrial safety conditions to avoid the risk that may arise to the personnel subjected to the gases of the disinfectants. Currently the disinfectants available are formaldehyde an hydrogen peroxide (several countries have prohibited the use formaldehyde for disinfection of fertile eggs). The use of other products such as ozone, hydrogen peroxide and ultraviolet radiation is being investigated.

Disinfection by washing. It will be effective as long as it is carried out under adequate conditions and with equipment that works correctly. This process must be carried out immediately after each egg collection. The disinfection of eggs using liquid products is being questioned in several countries for possible environmental contamination. these discarded liquids (discharges) are not well processed or filtered and produce soil contamination. The post-processing of these discharges constitutes an additional cost in the production of a fertile egg.

Constant maintenance of the equipment is required to carry out this process. Maintenance of the area where the disinfection is carried out is important, too. This area must be a clean and organized. The elements that are used must be constantly washed and disinfected. It is essential to train the workers, not only for the management of the equipment, preparation of the solutions, and correct execution of the process but also regarding excellent personal hygiene, proper hand washing and the use of gloves (disinfectant solutions can be skin irritants).

Washing of the eggs can cause contamination if it is not done correctly. Some important aspects to be taken into consideration are:

- Water temperature lower than the recommended levels. The water temperature of the washing machine must always be higher than that of the eggs (recommended temperature, 44° - 48° C or 111° to 118°F).
- Microbiological quality of water. The water to be used must be optimal, meeting requirements for human consumption. Do not use recirculated water unless it has an effective water treatment process prior to using it in disinfection.
- Area where the washing is carried out must be maintained properly
- Equipment and implements must be washed and disinfected daily. Avoid bacterial contamination on the surfaces of this equipment.
- Select adequate disinfectant. The solution used must contain a detergent - disinfectant, with action in the presence of organic matter. The selection of the disinfectant must be made according to regulations.

Fertile egg and bacterial contamination of the hatchery

Can dirty eggs be brought to incubation? This question can have different answers depending on the particular interest of the person who is answering it. The presence of floor eggs/dirty eggs must be monitored constantly and the company needs to react according to the magnitude of the problem. First of all, it should be emphasized that in the breeder farm, work must be done to reduce dirty eggs to a minimum. This means mainly (but not only), implementing practices that reduce floor eggs. If this question refers specifically to a company with grandparent farms wanting to deliver a day-old Salmonella-free pullet, the answer would be to avoid sending dirty eggs to the hatchery. Many times, the decision to incubate dirty floor eggs has its origin in economic pressures, either by the value of the fertile egg itself, as by the demand and the high price of the day-old chick. So, if the decision is to incubate floor eggs, the following aspects should be considered:

- The washing and subsequent disinfection of a dirty egg is an additional cost.
- The risk of causing internal contamination is increased in the presence of small cracks and fissures in the surface of the egg.
- It is proven that dirty eggs, even when washed and disinfected, show lower hatch percentages than clean eggs. A decrease in hatchability up to 20% has been reported for dirty eggs. Decrease in the viability of the chicks with mortality during the first week from 4 to 15% has also been observed.
- If the decision is made to incubate dirty eggs after disinfection, these must be incubated separately from eggs classified as clean.
Sunbelt Rentals offers a wide range of poultry facility solutions including efficient condensation control and heat treatment solutions for virus elimination. We offer the newest fleet of chillers, industrial air conditioners, heaters, drying equipment, temporary power, blended systems and more. Designed to be self-contained, our equipment provides efficient, dependable performance with easy operation and mobility. In addition, we offer unmatched 24/7 emergency response, turnkey service and highly trained specialists with the knowledge and experience to respond quickly to all of your needs.

24/7 EMERGENCY RESPONSE | 888-379-7454 | SUNBELTRENTALS.COM
Figure 2: Effect of incubation of dirty eggs: bacterial multiplier effect of incubation process.

References

BENEFITS OF MPA MEMBERSHIP

Reed Wade, Grower Relations Coordinator
Mississippi Poultry Association

MPA Grower members receive several benefits from the Association, especially important are government relations and grower relations. The Association works to support a unified industry and to represent the industry to our government and the public.

The poultry and egg industry will continue to face significant legislative and regulatory challenges in years to come. As regulations increase from USDA, FDA, EPA, Miss. DEQ, Miss. Dept. of Revenue, and other federal, state and local agencies, MPA communicates on behalf of the industry to legislators and regulators.

MPA has a solid track record of accomplishments helping growers reduce costs and regulatory burdens. Just a few examples are:

• Eliminating the sales tax on electricity, propane and natural gas for plants and for farms.
• Lowering the sales tax on farm equipment and parts and labor for repairs to farm implements to 1.5%. This includes poultry house equipment and parts.
• Working with the Department of Environmental Quality to reduce paperwork for permits.
• Passing legislation preventing local governments from adding additional environmental regulations beyond what is required by the state.
• Doubling the amount of local food processors can borrow from the Emerging Crops Loan Program.

Passing legislation to prevent local governments from imposing bans on food items so preventing a patchwork of local menu requirements.

Working to maintain and increase funding for MSU divisions important to poultry.

Further Benefits:
• A grower relations coordinator on staff to help growers solve problems and get answers to questions.
• Four issues of Emerging Trends newsletter.
• Opportunity for your child or grandchild to receive one of four $4,000 Scholarships awarded each year.
• Four growers are members of the MPA Board of Directors and the Chairman of the Grower Advisory Committee is a member of the Executive Committee.
• Free attendance to Management School at Mississippi State (May 7 and 8). A two day event where growers and service technicians learn about the latest advancements and techniques in our industry. We hope you will make the decision to become a part of the Mississippi Poultry Association and help us to maintain our position as the #1 Agricultural Commodity in the State of Mississippi.

Please contact Reed Wade at (601) 932-7560 for more information.
Maintain complete control during load-out, cleaning and restocking with Cumberland’s scenario feature for EDGE®. The bypass option allows for system changes with the press of a button.

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

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

PROVEN & DEPENDABLE™
Just as this is the flu season for people, it is also the time of year when we have our highest risk for Avian Influenza (AI) outbreaks in poultry here in the Southeastern US. The last major outbreaks occurred in February and March of 2015, 2016 and 2017. Fortunately there have not been any cases of AI in our part of the country this year, possibly because of the relatively mild winter so far. However, we still need to be vigilant and practice enhanced biosecurity on our farms.

Since May of last year, an outbreak of a disease called virulent Newcastle Disease (vND) has been going on in California. Virulent Newcastle Disease is highly contagious and a fatal viral disease that strikes the respiratory, nervous and digestive systems of the birds, primarily chickens. Death often comes before clinical signs are noticeable. In addition to sudden death, clinical signs include sneezing, gasping for air, nasal discharge, coughing, greenish watery diarrhea, decreased activity, tremors, drooping wings, twisting of the head and neck, complete stiffness and swelling of eyes and neck.

There is a vaccine for vND, however the vaccine only prevents the birds from showing signs of illness, but not from getting infected. Therefore you can have healthy looking chickens that are infected and shedding virus, allowing the disease to spread. In fact this is occurring in California, with the illegal use of vaccines from Mexico, and has been one of the reasons the disease has continued to spread.

Since May of last year, the United States Department of Agriculture (USDA) has confirmed 381 cases of vND in Southern California, as well as one case in Utah County, Utah caused by an individual taking chickens from California to their farm in Utah. Fortunately a neighbor reported that a large number of chickens were dying and reported this to the State Veterinarian’s Office and they were able to investigate and stop the disease from spreading. These are all backyard birds, most of them are game birds. However, since December of last year, three commercial layer farms have become infected and over 300,000 birds were depopulated.

I know that a disease in California may not seem to pose a risk to us here in Mississippi, however we never know what connections may be present between people that work on our farms and someone back in California. As with all of our contagious diseases, people can bring the virus to your farm, it doesn’t have to be sick chickens. Please immediately report any unusual illness or sudden increase in mortality to your service technicians, so samples can be sent to the laboratory for diagnosis.

Practicing good biosecurity is not only a smart decision that protects your livelihood by keeping your flock healthy and profitable, but is also now a requirement to be eligible for indemnity in the event of an AI outbreak. In 2018 the USDA passed a rule that requires poultry companies and each grower to have a biosecurity plan, and these must be audited by the state. Congress determined after the 2015 High Path Avian Influenza outbreak which cost taxpayers nearly $1 billion, that for future outbreaks, the industry must prove it is doing everything possible to keep disease off the farms if they are going to receive taxpayer dollars in the form of indemnity and payments to eradicate the disease from the farm in the form of depopulation, disposal and cleaning and disinfection activities.

Important biosecurity practices focus on making sure you keep disease out of your poultry houses by using foot baths, boot covers or dedicated boots before going into each poultry house and, ideally, dedicated coveralls for each poultry house. Preventing exposure to wildlife by keeping spilled feed cleaned up, composters and incinerators operating properly to prevent vultures and dogs from having access to mortality and keeping houses tight to prevent wildbirds from entering poultry houses. It is also important to remember that whenever returning from public places like church, shopping, sale barn, feedstore etc. that you change clothing before coming back to your poultry farm. Any equipment that has been on another poultry farm needs to be cleaned and disinfected before use on your farm.

If you see an increase in mortality, respiratory disease or drop in egg production, it is important to contact your flock supervisor immediately so a disease investigation can be initiated. If you have any questions, please do not hesitate to contact my office at 1-888-646-8731 or jimw@mdac.ms.gov.
Longer lasting replacement pad manufactured from heavyweight kraft paper and triple cured. H2PAD features ProTec Edging to protect against UV and mechanical damage. In stock at a Georgia Poultry store near you. Call for truckload pricing.
In an annual turnabout, legislators served as “celebrity chefs” preparing omelets for legislative staff at the annual Egg Marketing Board and Mississippi Poultry Association Legislative Luncheon on Feb. 28. In addition to omelets, the luncheon featured boneless wings, biscuits and fruit.

While the Senate and House adjourned earlier that day, about two dozen lawmakers came to the event at Galloway United Methodist Church and about half of those prepared omelets including House Agriculture Chair Bill Pigott, R-Tylertown.

MPA President Mark Leggett welcomed the crowd to Galloway United Methodist Church, the site of the annual event. MPA Board member Dr. Ryn Laster, the chair of the Egg Marketing Board, introduced chef Nick Wallace who has appeared on the Food Network. Wallace instructed legislators in how to prepare the perfect omelet.

Commissioner of Agriculture and Commerce Andy Gipson spoke briefly about the importance of chickens and eggs to the state and then manned a skillet to help prepare lunch for the legislative staff, lobbyists and other legislators.

MPA Board Chair Pic Billingsley and Vice Chair Steve McLaurin mingled with the crowd. The chicken was provided by Sanderson Farms.

Many of those who attend say the relaxed affair is their favorite luncheon of the legislative session.
Let’s finance your poultry operation.

Your goals to start or grow your poultry operation are within reach. Whether you want to grow your first flock, expand your farm by constructing new poultry houses or purchase an existing poultry farm, First South can provide financing customized to fit your needs.
GRILLED CHICKEN AND SWEET POTATOES WITH ORANGE GLAZE

Becky Beard - Administrative Assistant, Mississippi Poultry Association

INGREDIENTS

- 4 chicken leg quarters
- 2 sweet potatoes, sliced in ½ inch thick rounds
- ½ teaspoon salt
- ½ teaspoon pepper

Orange Glaze:
- ½ cup frozen orange juice concentrate
- ½ cup maple syrup
- 2 tablespoons fresh rosemary
- ½ teaspoon each of salt and pepper

PREPARATION

Prepare charcoal or gas grill or preheat broiler. Place chicken and potatoes on grill or on sheet pan under broiler, sprinkle with salt and pepper. Grill or broil, turning a least once, about 25 minutes. Brush chicken and potatoes with half of the orange glaze and cook 30 seconds. Turn chicken and potatoes and brush with remaining glaze. Cook 1 minute and turn all pieces again; cook 1 minute more. Make 4 servings.

Orange Glaze: in small bowl, mix together ½ cup frozen orange juice concentrate; ½ cup maple syrup; 2 tablespoons chopped fresh rosemary; 1/2 teaspoon salt and ½ teaspoon pepper.

Nutrition information per serving: 466 calories; 15 g. fat; 4 g. saturated fat; 130% DV Vitamin A; 92% DV Vitamin C; 14 % DV iron.

INFORMATION ON NEW DEQ PERMITS FOR POULTRY GROWERS

Reed Wade, Grower Relations Coordinator - Mississippi Poultry Association

The Mississippi Department of Environmental Quality is still working on the new poultry farm permit that will take effect in 2019. MDEQ does not expect to have the new permit reissued until early summer. The current permit expired on Jan. 31, 2019. The permits are good for five years.

There will be nothing new impacting farm operations, according to Tracy Tomkins, who oversees agricultural permits for MDEQ.

There will be changes to the public participation for new or expanding farms which could include a 30-day contiguous landowner notification period instead of the current 17 days for someone objecting to your farm to file comments. The MDEQ is working on changes to the contiguous landowner notification requirements. The applications for an expansion or a new farm will be required to include tax maps after Jan. 31, 2019.

You need to submit a Notice of Intent (NOI) to apply for coverage under the new permit. You can download the NOI (Appendix A) on the MDEQ website at https://www.mdeq.ms.gov/wp-content/uploads/2017/06/Dry_Litter_Poultry_AppPackage.pdf.
UPCOMING EVENTS:

At all events involving growers, please practice strict biosecurity procedures

The Grower Advisory Committee will meet quarterly at the call of the Chairman.

- **Beef & Poultry Expo**
  THURSDAY, APRIL 11
  Smith County
  Agricultural Complex, Raleigh

- **MPA, Inc. Poultry Management School**
  MAY 7-8
  College of Veterinary Medicine
  MSU Poultry Science Dept.

- **Breeder/Hatchery Seminar**
  AUGUST 13 AND 14
  Pearl Lab (13) & Collins Civic Center (14)

- **MPA, Inc. Convention**
  SEPTEMBER 12-15
  Hilton Sandestin Golf & Tennis Resort, Destin, FL

WHICH CAME FIRST? THE LOAN.

Get started in the poultry business, or improve your current operation with financing from Southern AgCredit.

**Financing for:**
- Poultry Farm Purchases
- Poultry Farm Construction
- Updates, Repairs & Equipment

We can also refinance your existing poultry loans – so contact us today.

SouthernAgCredit.com
(800) 449-5742