Well, you did it again. Poultry is Mississippi’s leading agricultural commodity. Since our last newsletter, Mississippi State University published its annual report, and our industry led forestry one more time.

Mississippi’s poultry industry ranks fourth in the nation in broiler production and thirteenth in egg production. These accomplishments are the result of your hard work on Mississippi’s farm and in the plants.

Even with the high costs and the recession that began to bite in 2008, the value of broiler production rose eight percent and egg production was up fifteen percent, according to MSU.

The Mississippi Poultry Association works to keep the industry profitable for everyone. We have been busy since late last year protecting the poultry industry from burdensome and costly regulation and assisting you in efficiently complying with the constant stream of federal and state regulations.

You may not know how much MPA has done recently on the wave of new regulations that have come your way. This edition of Emerging Trends contains some reports on the activities on your behalf by your MPA staff.

MPA negotiated with the Mississippi Department of Environmental Quality (MDEQ) to reduce the regulatory burden of the new dry litter poultry permit. You cannot grow chickens in Mississippi without coverage under this new permit.

Prior to the February 28 MDEQ permit deadline, all growers under separate new federal rules had to notify the Mississippi Emergency Management Agency and their local emergency agency by phone and then by letter that poultry houses release ammonia. (Seems kind of obvious, does it not?) MPA worked closely with the governor’s office to make this process as smooth as possible.

At the Legislature, I have been working to achieve some tax relief for poultry farmers. As the 2009 legislative session draws to a close, it appears we have a good chance of achieving a sales tax reduction on the sale, repair and maintenance of equipment in poultry houses. Both the Senate and House unanimously supported a reduction and now the trick is resolving the differences before legislators go home.

We will continue to work hard like you do to keep Mississippi poultry first.
New HATCHPAK® Cocci III
SAFE, EFFECTIVE AND PROTECTIVE

Introducing a new biological tool to fight coccidiosis - New HATCHPAK® Cocci III from Merial Select.

HATCHPAK® Key Advantages:

- Only coccidial vaccine in the USA to offer genetically stable precocious strains of Eimeria.¹
- Proven efficacious: stimulates the bird’s natural immune response.²
- Aids in the prevention of coccidiosis caused by Eimeria acervulina, tenella and maxima.
- Administer to day-old chicks via coarse spray cabinet in the hatchery.
- Biological alternative to feed additives and other pathogenic strain coccidial vaccines.
- Convenient 5,000 and 10,000 dose sizes fit most vaccination programs.

Value Beyond The Label. Don’t Just Choose a Product, Choose a Company.

1. Merial Study #00-126.
I have been helping MPA members comply with new environmental regulations at both the federal and state levels over the last few months. Both of the new regulations had short deadlines for growers to get into compliance.

**MDEQ DRY LITTER POULTRY PERMIT**
I have been working on the new Mississippi Department of Environmental Quality (DEQ) Dry Litter Poultry Permit since July of 2008. How important is this new permit? You cannot operate a poultry farm without it. Every farm must be covered by this general permit. The new permit does away with the distinction between AFOs and CAFOs, and eliminates education requirements and reporting requirements for CAFOs, but it imposes new record keeping duties on all growers.

I have set up meetings and stayed in contact with the U.S. National Resource Conservation Service (NRCS); the Mississippi Department of Environmental Quality (DEQ); the Mississippi Farm Bureau Federation; MPA Board Members; John Milner of Brunini, Grantham, Grower & Hewes law firm; and MPA’s Grower Advisory Committee. Through our work with these groups, we made some changes to the original version of the Dry Litter Poultry Permit that DEQ released to us in December 2008.

MPA requested an extension of the time to make comments, and working with the groups above, submitted comments from the association. We did not obtain all the changes that we would have liked, but the regulations are a lot better than the original proposal.

John Milner was a big help throughout this process giving us legal guidance. He also hosted a meeting at his office for the MPA Environmental Committee to develop our final comments, and he attended negotiations we had with DEQ.

Since DEQ released the Final Permit February 3, 2009, I have been involved in helping ensure that all our members know the deadlines and what is required to comply. I trained the service techs at two companies so that they could take the NOI packets out to the growers and explain to them what they needed to do. This was helpful due to the small window of time that we had to get this information out to the growers before the February 28 deadline. MPA staff has taken part in nine grower meetings for two other companies explaining to hundreds of growers what the permit covers, what is required to get coverage, and to stay in compliance. If you have questions, you can go to www.mspoultry.org for a DEQ presentation on the new permit and the forms you need to fill out, or you can call me at 601-932-7560.

**AMMONIA EMISSIONS REPORTING**
The U.S. Environmental Protection Agency (EPA) exempted farms from reporting air releases of hazardous substances from animal waste at farms to the federal government, but there was only partial exemption of reporting the releases to state and local governments. This new rule, finalized January 16, exempted all farms from reporting air releases under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), but required CAFOs to report ammonia and hydrogen sulfide releases to local and state agencies, as directed by the Emergency Planning and Community Right-to-Know Act (EPCRA).

CAFO growers had to make a one-time estimate to these state and local agencies by phone and one month later by letter. On the first anniversary date of the initial written notification, you need to reassess and confirm the accuracy of your calculations to the Mississippi Emergency Management Agency (MEMA) and the county emergency management agency in writing. Under the continuous release reporting regulation, no further reporting is required for the routine air releases covered under your specific report unless the rate, quantity, or ownership changes.

I worked on the new EPCRA and CERCLA ammonia emissions reporting guidelines. They came out on January 16, 2009, a Friday, and four days before farmers had to call in to both the Mississippi Emergency Management Agency and their county emergency management agency on January 20, 2009. This deadline was the Tuesday following, the Martin Luther King holiday. We got the information from the U.S. Poultry and Egg Association out to our company members who did a great job passing the information on to the growers.

It was a challenge getting information to MEMA because they were closed due to the holiday, so we used their website to obtain their contact info. Patrick Sullivan of the Governor’s office was a big help. He contacted Mike Womak, MEMA Director, and let him know that the calls were going to be flooding in the next day. MEMA also notified most of the county emergency management agencies letting them know what was going on and assisting growers in a timely and efficient manner. While some growers had difficulty getting calls through to MEMA initially, all growers were able to meet the deadline in one day. MPA staff has assisted several growers who have called with questions about this issue before the February 20th deadline when written notification was due to the same state and local agencies.

**MPA HAS MOVED!**

**OUR NEW LOCATION IS:**
110 Airport Road South, Suite C
Pearl, Mississippi 39208
New Phone: 601-932-7560
New Fax: 601-932-7568

Our building is located on the Airport Road Frontage Road between 1-20 and Highway 80.

Please note that we no longer have a P.O. Box, so all correspondence should be sent to the address above.
The State Tax Commission is changing the number of categories of poultry houses for property tax purposes, but the change should not result in increased values except for two categories of very old houses, and the increases in those should be very nominal. The other houses should decline in value very slightly. County tax assessors will use the values from the Tax Commission and reduce them by 45% to account for the additional depreciation brought on by worsening economic conditions. Taxes should not increase as a result of applying the new schedule.

The eight categories will drop to three beginning with the 2009 land roll. The three are:

- B-74 conventional poultry houses. Most poultry houses in this category were built prior to 1995.
- B75 broiler and pullet cool-celled or tunnel ventilation houses.
- B-76 breeder and/or egg houses
- B-71A is for poultry compost buildings.

Going from eight to three categories should not result in an increase in the value of the poultry houses, according to Frank McCain, head of the STC property tax division. The changes have been explained to county tax assessors and should be published soon. Information will be posted on www.mspoultry.org when available.
Keynote Address: Advocates for Agriculture

Troy & Stacy Hadrick are fifth generation United States ranchers from western South Dakota. Their goal is to help you tell the positive story of agriculture.

Troy and Stacy states, “For far too long, those of us in agriculture have stood by while certain factions in this country have flat out lied about who we are and what we are about. We do not have the luxury of assuming people know the truth about agriculture. Each and every one of us in agriculture has a fantastic and positive story to tell.”

Troy and Stacy will walk you through their experiences, including dealing with a major national publication, and how they have used that single event to transform their thinking and their daily lives. This incredible story will captivate your attention and motivate you to tell the positive story of agriculture.

Pre-Conference Courses

“Promote Your Agricultural Operation with a Web site”
Web sites are an inexpensive means of promoting your farming operation. Learn the “how-to’s” to begin a Web site and the tips to entice people to visit your site often.

“FAST Tools” to Make Sound Farm Financial Decisions
FAST (Farm Analysis Solution Tools) are a suite of Microsoft Excel spreadsheets designed to assist those in agriculture to make better decisions via user-friendly computer programs.

www.farmdoc.uiuc.edu/fasttools

Entrepreneurship for the Farm
Whether you are thinking about another enterprise or just want to adopt a strategic way of thinking for your current operation, this overview of a nationally used program will provide a guide to further business efforts.

Funding for this project was provided by the Southern Region Risk Management Education Center, the USDA Cooperative State Research Education and Extension Service (CSREES) under funding number 2007-49200-03891, the Southern Rural Development Center, and the Mississippi State University Extension Service. Mississippi State University is an equal opportunity institution.
**Di-Kill**

*Benefits:*
- Kills warfarin-resistant rats
- Lower primary toxicity — Di-Kill is less toxic than other bait to non-target animals
- Hard-hitting anticoagulant — may kill rats and mice in a single feeding, with first dead rodents appearing 4–5 days after treatment begins
- Palatable formulation made from food-grade ingredients
- Gnawing edges improve acceptability
- Outstanding control of mice — it takes over 2 times as much Bromadialone to kill mice than with Di-Kill

**Active Ingredient:**
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- Other Ingredients: 99.995%
- Total: 100.000%

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**Dominion 4L**

*Flowable insecticide for the control of Darkling Beetles*

**Advantages:**
- Controls Adult Darkling Beetles & Larvae
- Flexible Application for any Poultry Operation
- Can be used on entire footing, banded applications and crack and crevice
- One 60 oz bottle treats TWO 20,000 sq ft poultry houses using banded application
- Easy to mix and effective single dose application

**Active Ingredient - % by Weight:**
- Imidacloprid
  1-[(6-chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine: 42.3%
  Other Ingredients: 57.7%
- Total: 100%
- Contains 4lbs of active ingredient per gallon

---

**Item #** | **Product Description** | **UOM**
--- | --- | ---
52258 | DiKill Blocks | 18lb
52259 | DiKill Blocks | 2 x 9 lb
52260 | DiKill Place Packs | 100 x 43 gm
52331 | Dominion 4 L | 60oz

Contact your local IVESCO sales representative for pricing.
The Mississippi Legislature understands that farmers need some tax relief and even though the state budget is tight, 2009 may be the year that sales tax relief becomes a reality.

Call your legislators at home or at the Capitol at 601-359-3770 and thank them for passing sales tax relief for farmers. Ask them to make sure the bill becomes law.

Both the Senate and the House have passed a sales tax reduction for farmers. Sen. Perry Lee of Mendhenall introduced Senate Bill 2606 which passed the Senate in January and Rep. Bo Eaton of Taylorsville introduced House Bill 1733 which passed the House in late February.

The two bills are in agreement on the following features:

- Lower the sales tax on farm equipment, repairs and maintenance to 1.5 percent. Some items are now taxed at 3 percent and others at 7 percent. Labor for repairs or maintenance is currently taxed at 7 percent.
- Raise the tax on tractors to 1.5 percent from 1 percent.
- Lower the sales tax on logging equipment to 1.5 percent. It is now 3 percent on equipment used by loggers and for equipment used in tree farming.

The House of Representatives bill makes a few other changes, including:

- Requiring farmers to apply with the State Tax Commission to be certified a “bona fide farmer” the same is true for a “bona fide logger.” Bona fide farmers would be those who file a Schedule F with the Internal Revenue Service.
- Adding a section that would reduce the sales tax on repairs, renovations, additions to or improvements to poultry houses, related buildings, dairy barns and other outbuildings. The tax would be reduced in the House bill for those building their own houses.

Both bills will likely go to a conference committee of three Senators and three Representatives, who will work out the differences and produce a final compromise before the scheduled end of the 2009 session on April 4.

The price tag in terms of loss to the state general fund for this bill is somewhere between $1.5 million and $13.8 million, according to the State Tax Commission.
For the past 14 years, John Logan has been president and manager of Brinson Farms, LLC – a poultry, beef and timber farming operation. He is president of J&L Farm Services, Inc., a propane wholesaler and general construction company. Logan patented a high temperature methane digester for poultry waste. He is also president of Eagle Green Energy, LLC, a renewable energy development company.

Brinson Farms is a broiler farm in Jeff Davis County in South Mississippi that has grown broilers for Tyson Foods, Inc. for the past 15 years. They place 270,000 birds per flock and raise about six flocks per year.

A day on Brinson Farms consists of a 6:00 a.m. check of the houses to ensure that the birds are comfortable and have adequate food and water readily available. This ensures that the birds have a high quality life while producing the best yields for Brinson Farms and Tyson Foods, Inc. At 7:00 a.m. to noon, Brinson Farms employees check the houses thoroughly for mortality and any repairs or adjustments that may need to take place in the houses.

Brinson Farms is also unique in that they use their chicken litter to produce energy to run the farm. During the day, they must load the anaerobic digester to make enough methane gas to generate electricity to help run the farm. Employees make a final round on the farm to prepare the digester and birds for the next day of operation. All these steps are repeated seven days a week, 52 weeks a year.

How the high temperature methane digester plant works:

“We store our poultry litter in a holding shed,” Logan continued. “A portion of the stored poultry litter is transferred daily to a mixing tank, along with some of the hot water. The resultant slurry is then moved into the anaerobic digester, where the special bacteria produce a bio-gas from the carbon in the manure.”

The bacterium breaks down the slurry mixture into both gas and a liquid fertilizer byproduct. Both products are transferred to yet another holding tank. Scrubbers purify the gas by removing the undesirable gases and the smell. The methane is then compressed into a large storage vessel (old propane tank) for use as natural gas on the farm. Logan sells the excess electricity that the farm does not use to Southern Pine Electrical Power Association for distribution on their power grid.

“The leftover liquid byproduct is developed into an organic, Class A fertilizer that can get a premium price in the marketplace,” he said.

Logan and his wife, Bettye V. Brinson, have three daughters and five grandchildren.
Feed mill throughput problems?

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OMRI listed for Organic Growers
A coarse grind of the popular AZOMITE® anti-caking agent

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WWW.MSPOULTRY.ORG 9
Magnolia Beef & Poultry Expo

Trade Show and Educational Seminars for Beef and Poultry Producers.

Educational seminars, trade show featuring agricultural equipment for beef and poultry producers, pharmaceuticals for cattle, and other valuable information.

Door prizes will be given in each educational session.

Educational Sessions include:
General Dry Poultry Operating Permit 
Ventilation – Dr. Jody Purswell
How to Grow Clover Successfully
Body Condition Scores & How They Affect Reproduction – Dr. Justin Rhinehart

Contact your local Extension office or Community Bank for an agenda of the event.

Thursday, April 2, 2009
9:00 a.m. – 5:00 p.m.

Sponsored by:
Mississippi State University Extension Service
Jasper, Newton, Rankin, Scott, Simpson & Smith Counties and
Community Bank

SMITH COUNTY AG COMPLEX • Highway 35 South • Raleigh, Mississippi

Mississippi State University does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, or veteran status.
YOU ARE ALL INVITED to Starkville, Mississippi to spend two days learning from top notch speakers about disease control, effective communication, and much, much more, and at night, enjoy meeting and greeting old friends. The 2009 MPA Poultry Management School kicks off at 1:00 p.m. on May 14 and ends on Friday afternoon around noon. Dr. Mark Keenum, the new president of Mississippi State University, will be there to welcome us. After Dr. Keenum speaks and gets us motivated, we will have an afternoon filled with interesting and informative speakers, such as Dr. Leonard Fussell with Cobb-Vantress, an industry outlook by Mike Donohue, and some role-playing to catch us all up on how to communicate better with each other.

We are excited this year to have Dr. Jeremiah Davis’ and Dr. Jody Purswell’s latest invention, a roving complete chicken house (without the chickens). It sounds exciting and very interesting, so make your plans to come and enjoy this time with us.

Please join us at 5:00 p.m. on May 14 for the ride over to the VFW for a large crawfish boil with all the trimmings. The crawfish boil is sponsored by our hard working Allied Industry Committee, led this year by Buddy Clark with CevaBiomune. Jeff Little and Scott Wallace with Merial Select/Avitech will sponsor our hospitality hour. For those of you who don’t like crawfish, there will be other food furnished by John Autry with CASCO. Lunch, sponsored by First South Farm Credit, will be served at the Hill Poultry Science Building on Friday around noon, so make plans to eat lunch before you head home.

As always, the fee for attending is free to growers, $30.00 for growers who are not MPA members, $100.00 per person for company personnel and allied members, and $150.00 for non-members.

There are rooms reserved in MPA’s name until May 1 at the following hotels: Hampton Inn, Starkville; $89.00 per night, 1-662-324-1333; Holiday Inn Express, Starkville, $89.00 per night, 662-324-0076; and Microtel, Starkville, rate is $79.00, 662-615-0700. After May 1, rooms may not be available and will be at a higher rate. You will need to make your own room reservation.

On the night of May 14, the baseball team will be at home with a game between the MSU Dawgs and the LSU Tigers. Some of you may be interested in attending. We will have you back on campus by the time the game starts.

If you want to come to the Annual Poultry Management School, complete the registration form below and mail or fax it back to Becky Beard at the MPA office (fax 601-932-7568), or email me at mpaoffice@bellsouth.net. MPA accepts all major credit cards.

2009 POULTRY MANAGEMENT SCHOOL • REGISTRATION FORM

NAME _____________________________________________
COMPANY ___________________________________________
ADDRESS ___________________________________________
CITY, STATE & ZIP ___________________________________
PHONE _____________________________________________
EMAIL _____________________________________________

RIDING BUS TO HOSPITALITY DINNER AND BACK TO HOTEL YES ______ NO ______

Registration is free for MPA grower members and $30.00 for growers who are not MPA members. Registration fee is $100 for members, $150 per person for non-members. DUE TO CONTRACTUAL OBLIGATIONS; MPA CANNOT REFUND REGISTRATION FEE AFTER MAY 5, 2009.

PAYMENT: MAKE CHECKS PAYABLE TO MPA INC. CHECKS MUST ACCOMPANY THIS REGISTRATION FORM.

CREDIT CARD NO. __________________________________ EXP. DATE __________________
TYPE OF CARD ______________________________________
NAME ON THE CARD __________________________________
SIGNATURE __________________________________________

WWW.MSPOLTRY.ORG 11
The 2008 Farm Bill doubled the amount of funds available to assist agricultural producers in making Energy Efficiency Improvements and installing Renewable Energy Systems. The grant funds may be used to pay 25% of the eligible project costs, with a minimum grant request of $1,500 (total project cost of $6,000) and maximum grant request of $250,000 for Energy Efficiency Improvement and $500,000 for Renewable Energy Systems.

**MS GROWERS HAVE ALREADY RECEIVED $4 MILLION**
Over the past six years more than 100 poultry producers in Mississippi have been approved for more than $4 million to make energy efficiency improvements under this program. The grants are available from USDA-Rural Development.

For more information and for assistance with the grant application process, contact Southwest Mississippi Resource Conservation and Development, Inc. (RC&D). An application package will be sent to you by mail or email. Simply email RC&D at southwest@msrcd.org or call 601-833-5539 and leave your name, complete mailing address, at least one phone number, and an email address if applicable.

The application process may take from 30 to 90 days, depending mostly on the Energy Audit schedule. The application deadlines for 2009 have not yet been announced, RD is currently taking applications, so interested applicants need to act soon.

**ELIGIBLE ENERGY EFFICIENCY IMPROVEMENTS**
Eligible Energy Efficiency Improvements are “any improvements to a facility, building or process that reduces energy consumption”. Eligible improvements for poultry houses include just about any upgrades except feed systems and generators.

For example, for poultry producers eligible improvements might include any work to make the houses tighter and better insulated (walls, doors, ceilings), to improve or install brooders (radiator, direct-spark or tube), lighting, computer controllers, vent doors, curtain improvements, interior stir fans, exhaust fan replacement with more efficient fans, water/drinking systems, baffles, insulated brood curtains, etc.

For other agricultural producers, eligible energy efficiency improvements may include more efficient systems or system components for pumping, commodity handling, drying, heating, cooling, lighting, insulation, etc. Agricultural tillage equipment, used equipment and vehicles are not eligible.

**ELIGIBLE RENEWABLE ENERGY SYSTEMS**
Eligible renewable energy systems must produce usable energy from a renewable energy source. These may include biomass, methane digester, solar, wind, geothermal, gasification, hydroelectric, etc. For Mississippi producers, wood-burning systems (pellets, chips) appear to be the best renewable energy option at this time. Poultry producers in Arkansas, Missouri, and some other states have been successful with such systems.

**APPLY BEFORE BEGINNING WORK!**
Only costs of eligible improvements purchased and installed after the date of complete application being received by USDA-RBCS (Rural Business-Cooperative Service) state office are eligible for grant reimbursement, assuming the grant is eventually funded. Applications go through a national competitive process and final approval is based on how your application competes against others across the US. Approval is not guaranteed and final word of funding status may not be received until September, 2009. An applicant may begin retrofitting as soon as the final grant application is sent to Rural Development, however, incurring expenses prior to funding approval would be at applicant’s own risk.

**TREE BUFFER GRANTS STILL AVAILABLE**
Want to be a “better neighbor” by reducing sound, odor, and dust movement from your poultry farm? Or just want to improve the visual image of your farm? Southwest MS RC&D still has funds available to pay half the cost of planting buffers of trees around your poultry houses.

The funds will also pay half the cost of a drip irrigation system if one is determined to be needed to insure adequate tree survival and growth. 2009 is the last planting season that these funds will be available, so contact SW MS RC&D by April 30 to sign up. Call 601-833-5539 or email southwest@msrcd.org.

**GRANTS AVAILABLE FOR ENERGY AUDITS**
If you need a comprehensive energy audit of your poultry operation to determine the different options available to you for reducing energy consumption, grants are available to pay half the cost. Contact SW MS RC&D for that information also. The energy audits show the return on investment (payback period) for each potential retrofit or improvement.
By February 28, all poultry farms in Mississippi had to apply for the new Dry Litter Poultry (DLP) permit from the Mississippi Department of Environmental Quality to operate in Mississippi. Penalties for operating without this permit could be as high as $25,000 per day.

This is a general permit which requires you to fill out some information about your farm and submit it to MDEQ and then keep records at your farm on its operation. Most of what is required in the permit, you are already doing, but now you will be keeping records on these activities.

If you have a current nutrient management plan (NMP), you must fill out the seven pages in Appendix A of the Dry Litter Poultry Forms Package in order to have your farm covered by this new general permit. If you have an expired permit or never had one, you must get a new NMP and fill out the seven pages. Be sure that if you have an incinerator that you indicate that on Appendix A.

You can mail the completed Appendix A to the Mississippi Department of Environmental Quality, P.O. Box 2261, Jackson, MS 39225.

For assistance in completing the permit, you can contact Jesse Thompson, MDEQ, 601-961-5167. You can contact me, J.D. Sumrall, at MPA 601-932-7560.

Once you submit the paperwork for coverage in the general permit, you must keep the following records for five (5) years on your farm using appendices D-I of the DLP Forms Package.

- Land Application (Appendix D): The method and equipment used to apply litter, the expected crop yields, and the weather conditions before and after application as well as the date and the fields to which litter is applied.
- Inspection and Corrective Action (Appendix E): Monthly inspections of stormwater structures, litter storage structures, land application equipment and any corrective action needed and when taken.
- Litter and Soil Samples: Litter must be analyzed annually for nitrogen and phosphorous. The soil must be analyzed every five (5) years for phosphorous.
- Transfer of Litter to Other Persons (Appendix F): The date you transfer it and the name address and signature of the person who receives the litter and the amount received. You must document that you gave the recipient a copy of the most recent nutrient management analysis and a copy of the “Management Guidelines for Land Application of Animal Waste” (attached to your NMP).
- Mortality Handling (Appendix G): The number of birds, their estimated weight, your method of mortality management – incineration or composting.
- Incinerators (Appendix I): The time of day the incinerator is operated, its total burn time, the total hours per day operated, the loading rate and use and the temperature during operation.

THANK YOU, MPA!
A letter from National 4-H Poultry Competition student, Jessica Wilkinson, to MPA

Dear Mississippi Poultry Association,

I sure was excited and nervous!

Thank you so much for showing your faith in me by helping sponsor my trip to the National 4-H Poultry Competition in Louisville, Kentucky.

I had the opportunity to meet folks from all over the U.S. and learn valuable information. I attended workshops on careers in the poultry industry and learned more than you can imagine with areas of support that can help me in my future plans and education. Not all was lectures and classes; I did get to tour the Louisville Slugger Museum and the Kentucky Derby. I was fascinated with the museum and all the baseballs that Presidents of the U.S. had signed that were on display. I got a picture of them all.

Now for the best news, I placed 5th in public speaking, and 10th in cooking in the national competition. I am extremely proud of my placing, especially fighting 30 mile an hour winds while cooking. The topic of my speech was on Poultry, the Number One Success Story in U.S. Agriculture.

Again, as I stated in my request letter, I would be proud to do my speech at any function that you may have.

Thank you for giving me this opportunity that will stay with me for life. I have enclosed a picture of myself receiving my award, a savings bond, with Mr. Jesse Lyons, Professor at the University of Missouri.

Thank you very much,

Jessica Wilkinson
THE ONLY GOOD BROILER BREEDER EGG IS A FERTILIZED EGG

By Dr. Chris McDaniel, Associate Professor, Poultry Science Department, Mississippi State University

The main goal of broiler breeder management is producing eggs; however, the only good broiler breeder egg is a fertilized egg. Fertility, the percentage of eggs laid that are fertilized, is very important in poultry production. If an egg is not fertilized, then, of course, it will not contain an embryo and will not hatch. Simply put, “Hatchability can never be better than fertility.”

Hatchability is around eight percentage points lower than fertility because many chick embryos are usually lost during incubation. For example, even if 93 percent of the eggs laid are fertilized, then under normal incubation conditions only 85 percent of the eggs will hatch. This example illustrates how fertility must be very good to get above average hatchability and hatch bonus pay.

Breeders need to be kept under ideal conditions for maximum life of flock fertility. The chicken’s reproductive system is very sensitive to the bird’s environment, and under poor conditions the reproductive system will dwindle. For example, the environment can cause a rooster’s testes to increase or decrease in size by several hundred fold. But, before we can understand which management factors influence fertility, we must first examine the fascinating process of fertilization in poultry.

Fertilization in any animal depends on production of eggs from the female and sperm from the male. A problem with either sperm or egg production can decrease fertility. The rooster’s reproductive system is simple when compared to humans or other mammals. The rooster does not have a prostate gland or any of the accessory reproductive glands. Like all other animals, chicken sperm carry the genetic material from the rooster and are produced within the testes. The rooster has two very large testicles within the abdominal cavity on each side of the backbone. After sperm leave the testes, they enter the epididymis, where they gain the ability to swim. Next, the sperm enter the vas deferens, where they are stored until the rooster mates with a hen.

Sperm formation takes about 15 days. The rooster’s semen contains around 5 billion sperm per cc, about 40 times as much as that of a human. Once a rooster is mature and if he is maintained properly, he will manufacture about 35,000 sperm every second of his life. However, just like the males of many animal species, the fertilizing potential of roosters varies, even within a flock. For example, some roosters are extremely fertile and create a maximum number of quality sperm; other roosters are subfertile and do not make enough good sperm. This variation in rooster quality is caused by management, environment, nutrition, and genetics.

The hen does not produce nearly as many eggs as the rooster produces sperm, but during her 40 weeks of production, the broiler breeder hen lays about 180 eggs. Egg formation requires about 25 hours. Since egg formation requires more than 24 hours, even the best hens cannot lay an egg every day in succession throughout their productive life. As is the case with roosters, some hens are more productive than others, and management has a major impact on variability among hens.

The hen’s reproductive system can be divided into two major components: the ovary and the oviduct. The ovary produces the egg yolk. The oviduct adds the white, shell membranes, and shell to the yolk to complete egg formation.

The hen has only one ovary, which is on the left side of her abdomen. The ovary has several thousand ova (egg yolks) in different stages of development and looks like a bunch of grapes. Very immature yolks contain only genetic material from the hen, and as the yolks grow to around 1 mm in diameter, they become white. If the hen is managed properly, many of these developing egg yolks will mature in about 19 days into large, 35 mm, yellow yolks. As the egg yolk develops it will get water, sugars, fats, proteins, vitamins, and minerals from the hen’s blood. These are all necessary for the embryo to develop. The egg yolk is surrounded by the perivitelline membrane. This keeps all of these nutrients in a ball-shaped package. One particularly visible region of the perivitelline membrane is the germinal disc. The germinal disc is a small white dot about half the size of a pencil eraser on the surface of the yellow egg yolk. Fertilization takes place here, and embryonic development begins.

When the egg yolk is mature, it leaves the ovary, and within 20 minutes it is captured by the infundibulum, the first part of the oviduct. Here fertilization takes place. Following mating, sperm enter the hen’s oviduct and are stored within sperm storage glands. Only sperm that can swim will...
enter these sperm storage sites. These glands can store more than half a million sperm. Sperm can remain alive in these glands and fertilize eggs for up to 3 weeks.

A hen will have maximum fertility for only about 3 to 4 days after one mating. For this reason, the male-to-female ratio in a flock must be enough to ensure mating of every hen every 3 days or so. Sperm do not break through the eggshell. Instead they travel up the oviduct to the infundibulum to join with the egg yolk.

The sperm bind to the perivitelline membrane and make a hole as they enter the egg. Hundreds of sperm may enter the yolk. As a matter of fact, the more sperm that enter the yolk, the more likely the egg will be fertilized. Around 30 sperm must enter the egg near the germinal disc to insure a 95 percent chance of fertilization. While it is true that only one sperm is necessary to fertilize an egg, the probability of an egg’s being fertilized by only one sperm’s reaching and penetrating it is very low.

After about 15 minutes, the yolk leaves the infundibulum (fertilized or not) and receives the egg white, shell membranes, and shell over the next several hours from the magnum, isthmus, and uterus sections of the oviduct. When the hen lays a fertilized egg, the chick embryo has already developed for about 25 hours into approximately 20,000 embryonic cells and is a live, breathing organism. If this fertilized egg is handled properly before and during incubation, a healthy baby chick is the result.

This publication is a joint effort of the Mississippi State University Extension Service and the Mississippi Agricultural and Forestry Experiment Station.
### Upcoming Events

**April 2 – Magnolia Beef & Poultry Expo**
9:00 a.m. to 5:00 p.m. at the Smith County AG Complex in Raleigh, MS

**May 14-15 – Poultry Management School**
MSU Vet School, Registration 10:00 a.m., General Session 1:00 p.m., See page 11 of this newsletter for more details.

**June 9 – Grower Advisory Committee Meeting**
10:00 a.m. at Morgan’s on Main in Collins, MS

**September 8 – Grower Advisory Committee Meeting**
10:00 a.m. at Country Fisherman in Mendenhall, MS

**September 17-20 – MPA 72nd Annual Convention**
At the Hilton Sandestin Golf & Tennis Resort, Destin, FL. Call Becky Beard at (601) 932-7560 for more info.

**December 8 – Grower Advisory Committee Meeting**
Time to be announced at Morgan’s on Main in Collins, MS

### Grower Advisory Committee

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<tr>
<th>Name</th>
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<td>James Cochran</td>
<td>Marshall Durbin</td>
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<td>Michael Magee</td>
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<td>Paul R. Ingram</td>
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<td>Kenneth Upton</td>
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If you want to join the Mississippi Poultry Association as a Grower Member, call the MPA office at 601-355-0248 for more information!

### Mississippi Poultry Association

**Mark Leggett**, President
leggett@mspoultry.org

**Bob Billingsley**, Chairman

**Steve McLaurin**, Vice Chairman

**Ryn McDonald**, Treasurer

**Peter McKinley**, Grower Advisory Committee Chairman

**J. D. Sumrall**, Grower Relations Coordinator
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**Becky Beard**, Administrative Assistant
mpaoffice@bellsouth.net

**Contact Information**

Please note that we have moved
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New Fax: 601-932-7568
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