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EMERGING TBREAT A Newsletter of the Mississippi Poultry Association

### EVAPORATIVE COOLING VS. DRY FLOORS: A BALANCING ACT

By Jess Campbell, Jeremiah Davis, Dennis Brothers, Jim Donald & Gene Simpson, National Poultry Technology Center, Auburn University

We are often asked the question, "During hot weather flocks, how can I prevent wet litter in the front of my tunnel ventilated houses using evaporative cooling?" Realistically, we have to understand that a good tunnel house using evaporative cooling just doesn't allow the air to dry the litter as well in the front of the house, so you can't totally prevent some build-up of moisture in the litter. The good news is there are steps you can take to manage the problem. However, keeping litter moisture to a minimum and making good use of evaporative cooling for best flock performance is definitely a balancing act.

For many growers it probably isn't just the cool cells wetting the litter, but a combination of factors that can create a serious front-house moisture problem. This newsletter outlines five practical tips to help growers and companies successfully address all those factors, starting with litter preparation, and including drinker maintenance, ventilation during brooding, bird migration, and finally cool cell operation.

**TIP 1. LITTER PREPARATION.** The old Mike Eckman and Jim Donald saying, "So goes the litter, so goes the flock," is just as true today as it was 25 years ago. Pre-flock litter condition sets the stage for the growth process. Starting even the best flock of chicks on poor litter will end up in unsatisfactory results.

**Step 1: Remove all cake.** All existing cake must be removed from the house, especially the front of the house where tunnel doors, corners, posts, and end walls make it hard to do so. Don't accept what is left because it will work against you during the next flock. Caked litter is already saturated and can't hold additional moisture. Get it out of the house.

**Step 2: Get adequate litter depth.** Thin litter and moisture problems go hand in hand. About 70-80% of what goes through the water meter ends up in the house and the litter. Two to three inches of litter is simply not enough to do the job of holding moisture until it can be ventilated out of the house. Thin litter can only hold so much moisture and once it is saturated it is done and the floor slicks over. Starting the flock with thin litter in the front, especially under drinkers and along sidewalls, will only cause problems later.



Keeping litter adjacent to cool cells from getting too wet requires proper litter preparation between flocks, getting adequate litter depth and cake removal so it will absorb water and bird load for the duration of the flock. Proper ventilation, during and between flocks, is also extremely important in preventing front house floors from getting slicked over during the next flock.

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**Step 3: Ventilate between flocks.** The only way moisture is removed from litter inside the house is by ventilation. Insufficient ventilation means little to no moisture removal and leaving the endwall doors open might not be enough to do the job. Some growers find it helpful to run a tunnel (or other fans) during the day to help dry litter between flocks. Other growers ventilate through perimeter inlets on time and temperature between flocks. Wetter litter requires more attention to detail and extra effort to remove moisture. New shavings can have excess moisture that needs to be removed prior to placing the next flock. Don't wait until day 1 to ventilate the house. Be proactive and get the moisture out of the house before chicks are placed and heaters are turned on. Notice: If you close the house up, it must be ventilated or the in-house conditions may very well corrode the equipment inside the house, causing shortened equipment life.

<u>Think about this:</u> In a typical 40x500 foot house growing 9 pound chickens there is often 100,000 gallons of water that enters each house. There are three places this water goes: birds, air, and litter. Once the flock is gone, the litter is holding what is left over and the only way to get it out is with a decaking machine, cleaning it out, or ventilating it out. Cake and moisture that isn't removed will magnify problems for the next flock.

TIP 2. DRINKER MAINTENANCE. We are often asked, "How can I tell if my drinkers need replacing?" Nipple drinker replacement depends mainly on water quality, maintenance, and output. Ideally, we only want water to pass through the nipple drinkers when a bird activates the trigger. To keep the system from becoming fouled, establish a routine maintenance and cleaning program. Once a layer of biofilm or mineral buildup has been established in water lines and drinkers it is extremely difficult to correct the problem. Don't expect to clean the system with one single effort with a chemical cleaner. There is a difference between a fouled system and one that is worn out. Take time to randomly inspect drinkers and make sure the system is clean and properly functioning. If your farm has poor water quality this should be done more frequently.

**Step 1: Clean the lines.** Make sure to clean lines with a manufacturer approved drinker line cleaner and follow the directions carefully. All lines must be flushed first, then all lines charged with the cleaning solution, drinkers activated, lines thoroughly flushed and drinkers inspected. While flushing the system, make sure flush end hoses are not kinked. We recommend activating drinkers again after flushing out the cleaner solution with fresh water.

**Step 2: Monitor dark period water leakage.** Find out how much water is passing through the water meter at night when lights are off. In a solid wall or dark-out curtain house there should be very little to no bird activity on the drinker lines. This is a great opportunity to get an idea of just how much water is wasted in the house that is not associated with bird activation. Having more



The drinkers in picture above have been exposed to water high in iron and manganese that causes them to stick shut or leak. The next picture shows the sediment left over after we caught the cleaning solution from the drinker lines into a garbage can when we flushed them and poured the water off. Poor water quality often requires more frequent inspection and cleaning to keep drinkers functioning properly.

than about 8-10 gallons wasted each hour of dark time is a clear sign there are leaks down line or that it is time for new drinkers.

**Step 3: Field test a new set of drinkers.** Replace one full line of drinkers with a company suggested drinker to see how they compare to existing drinkers. Do this on a line used during brooding to get the full effect. Many growers are surprised at how much water existing drinkers are wasting. Monitor their performance during one flock and then see the difference. You can't out-manage worn drinkers.

Think about this: If 100,000 gallons of water goes into the house in a 63-day old flock just for the birds, a 10% leakage factor would be 10,000 more gallons of water into the litter. That is a lot of added water the litter has to absorb during a growth cycle.

TIP 3. VENTILATION DURING BROODING. Moisture removal during brooding is important in winter and in summer, too. If you are front-half brooding then there are birds in that section a minimum of 60 days each year and the water to go with it. Stay on top of removing moisture with adequate ventilation, even with litter amendments.

**Step 1: Monitor relative humidity (RH).** In-house RH should be monitored to keep moisture inside managed between 50 and 65%. A simple and inexpensive temperature and relative humidity sensor can be purchased locally and is more accurate than human estimates.

**Step 2: Use stir fans.** One of the benefits of using stirring fans during brooding is to help remove moisture from the house during the ventilation run cycles, so it is still important to use them in warmer weather too. Moisture evaporating from the litter creates a gradient with higher humidity in the very thin layer of air right next to the litter. The higher humidity of this thin layer reduces the drying effect of the air. Stir fans circulate air from the ceiling down to the litter, stripping away this thin layer and exposing the litter to the warmer, dryer air, which increases the moisture uptake from the litter.

TIP 4. BIRD MIGRATION MANAGEMENT. Don't forget that uniform feeder, drinker, and litter availability is one of the most important basic fundamental rules of growing a healthy, uniform flock. We don't expect perfect uniformity, but we must manage bird migration and strive to keep the flock as uniform as possible. During tunnel ventilation, birds begin to migrate toward the tunnel inlet end of the house and this causes several challenges. Feed and water availability is compromised, as well as the moisture load placed on the litter in the front of the house. Bird migration during tunnel causes non-uniformity of the flock, therefore poorer performance on the farm and problems resulting in processing downgrades.

**Step 1: Install migration fences.** Most companies have either required or suggested procedures for installing and managing migration fences. Some find it best to place and maintain bird separation from day one. Others call for a certain number installed before a prescribed day-of-age after turnout. This is an extremely

important litter management tool. Whatever the protocol is, follow it and maintain it throughout the grow-out.

**Step 2: Monitor dual water meters.** Many growers and companies have already been using two water meters in each house to manage bird uniformity from front-to-back. If you have not done this it can be a relatively simple and useful tool to have. The procedure involves splitting the house water system into two halves with two separate water meters, and moving the birds so as to equalize the amount of water passing through each meter. Many growers have success keeping and maintaining the difference between front-to-back house meters within about 100 gallons per day throughout the growout.

<u>Think about this:</u> If birds are placed at an average 1.0 density and migration causes a conservative estimated 0.90 in the front 100 feet then there are about 444 more chickens in that area. This doesn't seem like a problem when the birds



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are small but when they get 7 weeks and older they really take up a lot of space. We essentially have a 10% greater bird load in the front 100 feet of the house and the litter may not be able to handle it.

TIP 5. EVAPORATIVE COOLING (EC) SYSTEM OPERATION. Good litter preparation, drinker servicing, adequate ventilation, and managing bird migration are all important factors of growing chickens that must be taken seriously. Proper management of these set the stage for the successful use of evaporative cooling, making sure litter is ready and not wet before you start. There is no one correct EC program that will fully handle all of the variables that must be managed to provide the best possible environment for the birds. The ever-changing variables of bird age, bird size, density, outside temperature, outside relative humidity, house size, windspeed inside the house, breed of bird, etc., make it impossible to prescribe a one size fits all program. However, there are some tips to follow to help manage EC systems across the Broiler Belt:

**Step 1: Don't use EC at night.** EC operation is typically programmed into the controller to operate after about 9:00 am and turned off before about 8:00 pm (or before dark) each day when needed. Although weather patterns create some exceptions, for the most part this prevents the pads from running when the humidity is high at night further reducing moisture uptake from the litter in the front of the house.

**Step 2: Keep EC operation within its zone of temperature/ humidity effectiveness.** EC is most efficient and effective when outside air temperature is well above 80°F and RH is well below 80%, for example, when air is 95°F and RH at 50%. High humidity indicates high moisture in litter.

Step 3: Try to maintain bird comfort with wind-chill before going to EC. Turning on EC too aggressively after transition into Migration fences similar to the one above can be installed to keep bird migration in check so that the equipment and litter can handle the bird and moisture load while maintaining flock uniformity. This is a useful bird management tool, especially when houses are in tunnel mode. Photo at right shows a water panel with dual water meters (blue meters at bottom right of picture) installed to help the grower manage the number of birds between the front and back of the house using water consumption. Many growers are able to keep the meter readings within about 100 gallons of each other per day during the growout.

tunnel ventilation mode often causes the house to transition totally out of tunnel mode unnecessarily. One rough rule of thumb for middle-aged birds in narrow houses is to have the equivalent number of tunnel fans running to bird age in weeks + 1 fan. Example: 4-week old birds might have 5 fans running before starting EC. Toward the end of the flock with larger birds, we suggest at least 80% of the tunnel fans running (90-100% running if wet litter is an issue) before starting EC. Remember these are starting points, carefully watch bird activity and behavior to fine tune number of tunnel fans used with EC. See Newsletter #67 on Tunnel Ventilating Younger Birds for details on young birds.

Step 4: Don't hold additional tunnel fans back if birds are heavily panting and EC is in full operation. Panting means birds are under stress and require additional airflow by increasing the number of tunnel fans running (if available) to bring them closer to their comfort zone.

As always, consult with your live production management team for more specific guidelines using EC programs and controller setups customized for your operation.

**BOTTOM LINE:** A good tunnel house using EC will eventually result in damp litter in the tunnel inlet end of the house. That is the trade-off we get using evaporative cooling. We are trading in-house moisture control for temperature reduction. The idea is to take the necessary steps to start the flock off with and maintain uniform dry litter as long as possible. Then when EC is used extensively, the litter is in the best shape to handle it. We hope these 5 practical tips will help you successfully achieve your goals this summer by improving litter preparation, drinker maintenance, ventilation, bird migration and EC management. Good luck this summer!

*Special thanks to Isaac Singletary and Gary Roper for their contribution to this subject.* 

### LATEST DATA FROM THE CENSUS BUREAU GIVES BETTER PICTURE OF MISSISSIPPI POPULATION TRENDS

Alan Barefield, Extension Professor, Mississippi State University Extension Service, alan.barefield@msstate.edu

When the 2020 U.S. Census redistricting results were released earlier this year, we heard a lot of bad news about Mississippi. Tremendous population drops (particularly in the more rural counties) resulted in questions about the continued viability of communities and businesses in the state.

However, the release of the 2020 American Community Survey (ACS) estimates have not only tempered the earlier news, but has shed insight into the changes that are happening in our state and its counties and cities. The American Community Survey (ACS) is an annual survey conducted by the Census Bureau that provides vital information. The ACS, provides more information about jobs and occupations, educational attainment, veterans, whether people own or rent their homes, and other topics.

While the Decennial Census showed that Mississippi's total population declined by 0.2% from 2010 to 2020, ACS estimates indicated that the state's population grew by 1.4% over the same time period. Furthermore, the diversity of our state is increasing. While the ACS reported that the single-race, white-alone population declined by 1.8% from 2010 to 2020, the number of people who do not classify themselves as white alone or report two or more races in their ancestry increased by 6.1% from 1,180,081 in 2010 to 1,252,482 in 2020.

However, our population is growing older. The ACS estimates show that Mississippi's population under the age of 18 fell by 6.5% and the population between 18 and 44 years of age fell by 3.3% from 2010 to 2020. But the population between 44 and 62 years of age increased by 2.6% and the population 62 years of age and over increased by 29.3%

### BREEDER-HATCHERY SEMINAR SPEAKERS PROVIDED TIPS ON IMPROVING PULLET, BREEDER AND HATCHERY PERFORMANCE

Speakers at the MPA Breeder-Hatchery Seminar, Aug. 10-11 Sbrought their experience on everything from eggs, bugs, legs, alarms, thermometers, and incubators to help improve pullet, breeder, and hatchery performance.

In her talk on Blackhead: The Solution That's Been Hiding in Plain Sight, Dr. Victoria Drouet-Pratt said most research on Blackhead stopped in 1960s when new drugs came on the market. Those drugs are no longer used, and no new drugs have come on the market, so there is no silver bullet for controlling an outbreak but deworming earlier and longer is important in combatting an infection.

She said the protozoa that causes blackhead travels first to

the ceca and in the end-stage damages the liver of chickens. She gave a case study from 2017 of an outbreak that saw mortality rates of 7 -9 percent in pullets.

Speaking about Male Management and Spikes, Dr. Jeanna Wilson from the University of Georgia

Dr. Jeanna Wilson from said in breeder houses, fertility is a function of the number of males. She said growers and service techs should watch for foot and leg issues that can hamper mating. Mating frequency of females depends on the age of the females with older females mating more frequently.



explain that most people consider the hatch window to be from first chick to last chick but the tighter the hatch window, the better the chick quality will be. Factors that spread the hatch window include ventilation, moisture loss, damper opening, turning, spray nozzle pressure, fan speed and temperature calibration. Ways to

is important to maintain good hatch.

r opening, turning, spray nozzle pressure, fan speed and temperature calibration. Ways to identify a wide hatch window, he outlined include Conducting a Pre- Pull Assessment, Checking Embryo Shell Temperatures, Ventilation, Moisture Loss, staying on top of Maintenance Issues such as seals and gaskets, fans

and turning angles of trays.

Taylor Steele with Merck Animal Health explained Properly Calibrating Equipment. He said to use a mercury thermometer as the guide by which to judge other digital thermometers to stay within a 1.5 degree

spread. He said thermometers should be checked every six months and should not be calibrated using ice water because that is not the temperature the thermometer is intended to check for.

that when a new egg is laid, the cuticle is formed only after few minutes and that with floor eggs, there is a very high chance for

bacteria to pass through. Egg shell quality usually decreases in the

summer and can affect hatch. Dr. Ramachandran also said as egg size increases, shells become thinner and reduces hatch. Also, she

added that developing a routine program to check eggshell quality

Scott Jordan with Cobb-Vantress went inside the hatchery to

Dr. Sue Ann Hubbard, who recently started her own consulting business, said she agreed with other speakers that foot health is key to good fertility and ventilation management is important in maintaining good feet on hens and roosters. Rooster fertility is more affected by heat stress than hen fertility. She said a significant percentage of roosters should be weighed and fleshed weekly.

Weston Harwell with MGK wrapped up the seminar by explaining mite control, both the northern fowl mite and the red mite. The former likes a milder temperature, lives on the bird and one female mite can start an infestation, while the latter can live for nine months without a host and likes warmer temperatures. Both kinds can drain up to 6 percent of blood from birds per day, younger birds are more susceptible than older birds and are easily transferred from farm to farm. Pyrethrums, made from chrysanthemums and pyrethroids, a manmade version can be rotated, but no product will kill 100 percent of mites.

We would like to thank our sponsors: Aviagen, BankPlus, BarnTools, Boehringer Ingelheim, CBS Bio Platforms, Ceva, Cobb-Vantress, DPI Global, DSM Nutrition, Elanco Animal Health, First South Farm Credit, Georgia Poultry, Huvepharma, Innovad, Live Oak Bank, Merck, MS Ag, MWI Animal Health, QC Supply, Southern AgCredit, Val-Co, and Zoetis.

She said high calcium diets intended for females may do more harm to males. Consistent feeding, wind speeds of 600 to 750 feet per second, and temperatures below 85 degrees are best for male fertility. While adding spike males is necessary as the flock ages, she said, "take good care of the original set of males, the spikes are there to stir the pot."

Nick Bryars with BarnTools said Full Potential Alarms are ones that allow two-way connectivity. He said alarm systems using 3G technology will be obsolete when that system sunsets later this year. Barntools has a system that send smaller bits of data out and receives constant "pings" from the company that alerts growers faster to an outage.

Dr. Kelli Jones with Ceva Animal Health addressed Pullet Livability and Cocci, urging growers to learn what is normal for their birds and to "monitor when things are going good to establish a baseline. This includes paying close attention to mortality charts, leg health and monitoring water usage.

Dr. Keith Bramwell with Jamesway Chick Master Incubators gave his keys to incubation success starting with an excellent breeder program. He said the best hatcheries have good maintenance people who keep up a consistent preventative maintenance program and read the manuals. This includes calibrating equipment and "calibrating the calibrators" that monitor carbon dioxide, temperature, and air flow. He said, "ventilation is the fuel for incubation." Pointing back to the farms, he said, "when fertility drops, mortality increases," in the hatchery.

Dr. Reshma Ramachandran from the MSU Poultry Science Department spoke about eggshell quality in breeders. She said



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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. Partner Trey Jones has significant Environmental Litigation experience.



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Matthew W. Allen

### FOUR MSU GRADUATE STUDENTS WIN 2022 INTERNATIONAL PAPER RESEARCH SCHOLARSHIP

Reed Wade, Grower Relations Coordinator - Mississippi Poultry Association

our Mississippi State University graduate students will split the \$5,000 International Paper Research Scholarship for 2022.

The \$5,000 scholarship is awarded to graduate students in Poultry Science at Mississippi State University annually as a result of a donation from IP to the Mississippi Poultry Foundation. The MPA Board of Directors votes on projects that it judges as having the most potential benefit to the poultry industry.

This year's winner are: Priyanka Devkota, 1st place, \$2,000. Sabin Poudel, 2nd place, \$1,500, Charis Waters, and Jiddu Joseph tied for 3rd place with \$750. All of them were among MSU students who won awards for their presentations at the national convention of the Poultry Science Association (PSA).

**Priyanka Devkota** is a master's student currently enrolled at Mississippi State University in the Department of Poultry Science. She is from Nepal, and her hometown is Mount Everest. The dynamics of science and technology have always fascinated her ever since her childhood. The curiosity of how the micro-units in the cells like DNA, RNA can carry the complete genetic information led her to studying biological science. Her current research at Mississippi



Priyanka Devkota

State University emphasizes Understanding and Mitigating Avian Pathogenic *Escherichia coli* (APEC) Infection and Antimicrobial Resistance in the Poultry Environment. Currently, Priyanka works in Dr. Li Zhang's lab, particularly in molecular techniques, poultry disease control, and poultry microbiology. Priyanka won a Student Research Paper Certificate of Excellence at the recent PSA convention.

**Sabin Poudel** is a Ph.D. student under the direction of Dr. Li Zhang at MSU. His research is titled, "Expression analysis of novel vaccine candidate genes of *Campylobacter jejuni* in a cell line infection study." The major goal of this research is to develop a vaccine against the foodborne pathogen *Campylobacter*.



Sabin Poudel

Sabin grew up in the southern part of Nepal, a small country located in the lap of the Himalayas.

He received a DVM degree from Tribhuvan University, Nepal (2016) and a master's degree from Mississippi State University (2020). His research focuses on poultry's pre-harvest control of food-borne pathogens to reduce human illness. In the future, he plans to work as a poultry microbiologist and help address challenges in the poultry industry via research and innovation, primarily via the development of vaccines and rapid pathogen detection tools.

Poudel was also selected as the PSA hatchery student of year.

**Charis Waters** of Bon Aqua, Tennessee started raising chickens and ducks on her family's farm when she was eight years old. After gaining experience with her backyard flock, Charis worked as a veterinary assistant while attending the University of Tennessee at Martin. At UT Martin, she obtained her bachelor's degree in agriculture with a concentration in animal



Charis Waters

science and a minor in biology. Within the last year Charis started her master's program under Dr. Pratima Adhikari at Mississippi State University. During this time, Charis also completed a nutrition trial which evaluated the role of phytase and limestone particle size ratios on performance, egg quality and bone quality in the postpeak phase of single cycled laying hens. In this trial it was observed that 400 FTU of phytase had performance benefits on hen day egg production and feed conversion ratio. Additionally, a 40F:60C limestone ratio increased feed intake and tibia breaking strength. Charis won a Student Research Paper Certificate of Excellence at the PSA Convention.

**Jiddu Joseph** is a Poultry Science masters' student at Mississippi State University working with Dr. Reshma Ramachandran. He grew up in the southern state of India called Kerala. He received his undergraduate degree in Veterinary Science from Kerala Veterinary and Animal Sciences University, India (2020). His research interest is to develop prevention strategies such as vaccines against bacterial poultry diseases through advanced molecular techniques. In



Jiddu Joseph

the future, he plans to become a poultry microbiologist with a focus on molecular diagnostics and vaccinology.

Jiddu studied the virulence properties of avian pathogenic Escherichia coli (APEC). APEC is a pathogen that causes colibacillosis, a disease that leads to severe economic loss to the poultry industry worldwide. APEC can spread from broiler breeders through contaminated eggs to chicks and thus, needs to be controlled in the breeder flocks. However, the vast diversity of APEC strains causing disease as well as the limited information on the characteristics of APEC isolates from broiler breeders pose a significant challenge for control. This study was conducted to investigate the phenotypic virulence properties of twenty-eight APEC isolates obtained from broiler breeders with colibacillosis in Mississippi. The results showed that four isolates caused 100% mortality and eight isolates caused 0% mortality in day-old chicks. Further, based on the disease-causing ability, the isolates were classified as highly pathogenic, intermediate, and low pathogenic. The results of this study are significant to the poultry industry because it provides valuable information about the virulence properties of APEC causing disease in commercial broiler breeder flocks in Mississippi and can be used by the industry in developing effective vaccines against APEC.

Created in 2014, the International Paper Scholarship has now awarded \$45,000 to 29 students working on solving problems the poultry industry faces. The IP scholarship is the largest single scholarship awarded each year through the Mississippi Poultry Foundation.

"International Paper is pleased to partner with our poultry company customers to reward these promising young researchers searching for solutions to obstacles to the growth and prosperity of the industry. We believe the IP scholarship supporting these bright students at Mississippi State University will benefit the poultry industry," said Clay Adkins, IP National Account Manager-Protein.

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### TRAINING VETERINARIANS FOR THE POULTRY INDUSTRY: MISSISSIPPI STATE UNIVERSITY'S POULTRY MASTER'S DEGREE SPECIALIZATION PROGRAM FOR VETERINARIANS

Natalie Armour Manginsay, BVSc, MAM, PhD, Diplomate ACPV, Associate Clinical Professor, Avian Medicine, Poultry Research and Diagnostic Laboratory, Department of Pathobiology and Population Medicine, College of Veterinary Medicine, Mississippi State University

Mississippi State University's Master of Veterinary and Biomedical Science, Poultry Specialty program, housed since 2013 at the Poultry Research and Diagnostic Laboratory (PRDL) in Pearl, MS, is making great strides in its goal to support the poultry industry by training veterinarians who have decided to specialize in poultry. One of only eight programs in the United States approved by the American College of Poultry Veterinarians (ACPV), MSU's program is among only a few of these programs which focus on training field veterinarians for the poultry industry.

Veterinarians are selected for this full-time, two-year, non-thesis program through a highly competitive process, culminating in the selection of one candidate per year. The program involves intensive hands-on training under the guidance of a team of CVM professors who are poultry veterinarians and ACPV diplomates (Drs. Danny Magee (recently retired), Alejandro Banda, Martha Pulido, and Natalie Armour). During their program, Master's students participate in coursework, necropsies, field visits, externships, laboratory work and applied research projects. Master's degree students present their research at regional, national, and international conferences, and produce three research papers during their programs.

The success of MSU College of Veterinary Medicine's (CVM's) Poultry Master's degree program is reflected in the ability of its graduates to pass the ACPV board examination after completion of the program, and, importantly, in the gainful employment of new poultry veterinarians in the poultry industry. Recent graduates of this program are currently employed as veterinarians working in various sectors of the poultry industry, including primary breeders (Aviagen - Dr. Kevin Maschek), broiler production (Peco Foods - Dr. Will Dillard; Koch Foods - Dr. Rachel Thiemann), turkey production (Butterball - Dr. Eric Orozco), allied industry (Huvepharma – Dr. Leslie Johnson) and private consultancy (Dr. Jessica Hockaday). Prior to 2013, the CVM Poultry Master's degree program was located in Starkville. Graduates from this program are well-established in the poultry industry in broiler production (Perdue Foods – Dr. Rick Sharpton; Wayne-Sanderson Farms – Drs.



Dr. Eric Orozco (third from left) and Dr. Leslie Johnson (fourth from left) with PRDL faculty Drs. Martha Pulido, Alejandro Banda, and Natalie Armour, after receiving their ACPV diplomate certificates at the American Association of Avian Pathologists (AAAP) annual meeting in Philadelphia, PA this year.

Phil Stayer, Mark Burleson and Jonathan James), allied industry (Huvepharma - Dr. David Smith) and private consultancy (Dr. Sue Ann Hubbard).

In addition to the hard work of our students and poultry professors, the success of this program hinges on the support and involvement of the poultry industry. Poultry companies which open their doors for field trips and externships, and field veterinarians (including adjunct faculty) and other personnel who share their knowledge and expertise provide invaluable practical learning experiences for our master's degree students. Additionally, the Poultry Master's degree program would not be possible without the financial support of those allied companies which provide direct funding for our program and fund out-ofstate trips and externships. Funding from Merck Animal Health, Elanco Animal Health and BioChek has enabled MSU to fully support two graduate students in the past year. A scholarship from the Mississippi Poultry Foundation allowed two of our students, Drs. Rachel Thiemann, and Gunnar Dunnam to attend and present at the International Poultry Scientific Forum meeting held in conjunction with the International Production and Processing Expo in Atlanta, Georgia in January of this year. Dr. Thiemann received the Best Student Presentation award at this conference for her presentation on the use of ATP bioluminescence to quantify hatching egg bacterial contamination.



Dr. Rachel Thiemann graduated from MSU's Master of Veterinary Science, Poultry Specialty program in May 2022 and is currently employed as a veterinarian for Koch Foods

Current students in CVM's Poultry Master's degree program are Dr. Gunnar Dunnam (second year student) and Dr. Hugo Ramirez (first year

Dr. Thiemann



student). Dr. Dunnam, a native of Mississippi, received his B.S. in Animal and Dairy Sciences (summa cum laude) in 2017 and his Doctor of Veterinary Medicine degree in 2021, both from Mississippi State University. He started in CVM's Poultry Master's degree program in 2021 and is due to graduate in May of 2023. During his time in the program, Dr. Dunnam has completed research projects to address current issues faced by Mississippi's poultry

Dr. Dunnam

industry, including evaluating vaccination responses to multiple antigens in broiler breeder pullets, and investigating recent outbreaks of disease caused by the bacteria Enterococcus cecorum. Earlier this year, Dr. Dunnam received the B.S. Pomeroy Award for Student Achievement in Avian Diseases Research at the North Central Avian Disease Conference in Minneapolis, Minnesota for his presentation on investigating an unusual presentation of Gangrenous Dermatitis in breeder pullets. After



Dr. Dunnam on externship with a turkey company EMERGING TRENDS 9

#### Latest Data from the Census Bureau... continued from page 4

But looking at the state as a whole only tells part of the story. In considering total population, the six counties in Mississippi that are estimated to have a population over 100,000 persons in 2020 (Hinds, Harrison, DeSoto, Rankin, Jackson, and Madison) saw their aggregate total population increase by 8.0% from 2010-2020. Counties estimated to have a population between 25,000 and 100,000 persons in 2020 experienced neither population growth nor decline and counties with an estimated population under 25,000 saw the aggregate population fall by 5.3%.

The following table breaks down the state's population growth by 2020 estimated county size and age bracket. Note that the state's smallest 76 counties are losing their younger populations, but older populations are increasing at a fairly rapid rate. The state's largest counties are experiencing the largest growth in population 62 years of age and over; this is likely due to the presence of medical facilities

	Counties over 100,000 population	25,000 – 100,000 population	Counties with under 25,000 population
Under 18 years	-0.6%	-6.9%	-14.5%
18-44 years	3.0%	-5.1%	-17.2%
44-62 years	10.3%	4.1%	39.1%
62 years and over	42.8%	26.7%	18.3%

and other amenities that appeal to this age group.

The following table presents estimates of the change in population by race and county size. Note that the largest counties in the state are experiencing population growth for the three race categories analyzed. All county sizes are aggregately experiencing substantial growth for races other than white alone or black or African American alone. The black or African American alone populations are increasing in the state's largest counties, but are declining in the

	Counties over 100,000 population	25,000 – 100,000 population	Counties with under 25,000 population
White alone	1.4%	-1.9%	-6.7%
Black or African American alone	15.7%	0.0%	-5.8%
Some other race	47.7%	36.8%	47.7%

state's smallest population counties.

Hispanic populations have increased substantially in all estimated county size classes. The Hispanic population has increased by 33.9% in counties with an estimated total population of over 100,000 persons, by 35.5% for counties with an estimated total population of 25,000 to 100,000 persons; and by 37.9% for counties with an estimated total population under 25,000 persons. Hispanic populations are relatively small when compared to other population classes within the state (the ACS estimated that 94,342 Hispanics lived in Mississippi in 2020; this accounted for 3.2% of the state's total population).

But what does all of this mean for the state's poultry industry? While matching specific products to specific age, race, or Hispanic ethnicity categories is far beyond the scope of this article, processors should consider how an older and more diverse population might affect the demand for those products.



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#### Training Veternarians... continued from page 9

graduation, Dr. Dunnam tentatively plans to work in the broiler industry.

Dr. Dunnam is currently a second-year student in MSU's Master of Veterinary Science, Poultry Specialty program.



Dr. Ramirez

Dr. Hugo Ramirez, a native of Colombia, received his Doctor of Veterinary Medicine degree in 2011 from University of Caldas and his Master of Finance degree in 2019 from EAFIT University (both in Colombia). Dr. Ramirez has 10 years of experience working in diverse facets of the Colombian poultry industry, including commercial layer production (1 year as owner/manager of a small layer flock), broiler production (broiler manager for 2 years, broiler breeder and hatchery manager for 6 years) and allied industry (1.5 years as a poultry technical manager for MSD Colombia). During his time at MSD, he had the opportunity to exchange knowledge about



Dr. Ramirez inoculating agar plates for bacterial culture

avian medicine and poultry production with people from around the world. Dr. Ramirez started in Mississippi CVM's Poultry Master's degree program in June 2022 and is due to graduate in May of 2024. After graduation, Dr. Ramirez plans to work in the broiler industry.

Dr. Ramirez is currently a first-year student in MSU's Master of Veterinary Science, Poultry Specialty program.

### WAYNE-SANDERSON FARMS CREATES NEW ERA IN MISSISSIPPI POULTRY ASSOCIATION

The Mississippi Poultry Association entered a new era when two strong poultry companies with a long history in the state merged into one.

The new privately held poultry company, Wayne-Sanderson Farms, is the result of a joint venture between Cargill and

Continental Grain. The plan for acquiring Sanderson Farms, Inc. and merging with Wayne Farms was first announced on August 9, 2021 and was later approved by the Justice Department on July 22 of this year.

As the nation's third-largest poultry producer, the new company offers a diverse portfolio of products, a strong operating culture, and an industry-leading workforce of more than 26,000 people, producing affordable, high-quality poultry products for retail, foodservice, restaurant, industrial and institutional segments. Wayne-Sanderson Farms is also committed to its grower relationships and will be establishing an industry leading base payment system and local grower councils for each complex later this fall. Additionally, the company has established a dedicated anonymous hotline for its growers and will be adopting policies and clear guidelines to help keep farms within the family.

Sanderson Farms was founded in 1947 and began as a feed and seed store in Laurel which grew to be the third largest poultry producer in the United States while Wayne Farms was founded in 1961 and grew to be the seventh largest poultry producer.

Wayne Farms began as Wayne Poultry division of Allied Mills in Laurel in 1957. When Wayne Farms sold their Laurel division to Amick Farms in 2021, the Mississippi Poultry Association welcomed the South Carolina based company, as a new member.

Wayne Farms and Sanderson Farms have similar footprints with some variations across the southeast. Both had complexes in North Carolina and Georgia. Sanderson had plants in Louisiana, Mississippi and Texas, while Wayne had plants in



Alabama and Arkansas. The combined company has 20 complexes and three prepared foods facilities across seven states.

"MPA is proud to welcome Wayne Farms back to Mississippi in this new role and we look forward to a bright future for

the industry in Mississippi," said Mark Leggett, MPA President.

Clint Rivers, President and Chief Executive Officer of Wayne-Sanderson Farms, said, "I am honored to lead the new Wayne-Sanderson Farms, which brings together a talented team with complementary operations and cultures and a strong commitment to employees, farmers and the communities where we operate."

At the time the sale was announced in 2021, Joe Sanderson, Chairman and Chief Executive Officer of Sanderson Farms, Inc., said, "We are proud to be joining with Cargill and Continental Grain and we are confident that they will be strong stewards of the Sanderson Farms team, brand and assets going forward. As part of the newly created company, Sanderson Farms and its new owners will remain committed to the employees, poultry producers, customers, communities, environment, and animals under our care, and to continuing to deliver the highest quality products and the best service in our industry to our customers."

Paul Fribourg, Chairman and CEO of Continental Grain, said, "Wayne Farms has been one of the most important and successful parts of Continental Grain for almost 60 years, so bringing together two great partners with two great poultry companies will ensure good things for our customers, our grower partners, and our employees."

David MacLennan, Chairman and CEO of Cargill, stated, "Expanding our poultry offerings to the U.S. is a key enabler of our ability to meet customer and consumer demands. With these great businesses, and our strong partnership, we believe we will deliver a superior portfolio of products and services to our customers."



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### NOVEMBER 2022 ELECTION PREVIEW YOU WILL BE CHOOSING CONGRESSMEN AND JUDGES IN NOVEMBER ELECTIONS

On Nov. 8, we will be electing four Congressmen, two court of appeals judges, and 15 trial court (eight circuit and seven chancery) judges and one member of the Mississippi House of Representatives.

In the Congressional district party primaries on June 7, more Republicans voted than Democrats. Republicans reported 115,351 votes in their Congressional primaries compared to 74,023 reported by the Democrats. Because there was only one Democrat candidate in the third district, there were no votes reported to the Secretary of State in that race by the Democratic Party.

In the 4th District, Jackson County Sheriff Mike Ezell defeated incumbent Steven Palazzo. The other three incumbents were either unopposed or defeated challengers.

In the November general election:

- In the 1st district incumbent Republican Trent Kelly faces Democrat Dianne Black. She is a small business owner from Horn Lake.
- In the 2nd district incumbent Democrat Benny Thompson faces Republican Brian Flowers.
- In the 3rd district incumbent Republican Michael Guest, who had a close election in the first primary which he won handily in the runoff, faces Democrat Shuwaski Young who worked in the Obama administration.
- Ezell faces former Hattiesburg Mayor Johnnie Dupre in the 4th district.

The two Court of Appeals incumbents facing challengers this November are Virginia Carlton in District 4 and Joel Smith in District 5. Judicial elections are nonpartisan. District 4 includes the counties of Adams, Amite, Copiah, Covington, Franklin, Hinds (split with District 2), Jefferson Davis, Jones (split with District 3), Lawrence, Lincoln, Marion, Pike, Simpson, Walthall, and Wilkinson

Carlton faces Bruce Burton, who ran unsuccessfully as a Democrat for Public Service Commissioner (2011 and 2015) and Transportation Commissioner (2019), both in the Central District. Carlton served as a Republican in the Mississippi House of Representatives from 2004 to 2006 until she was appointed to the court by Gov. Haley

Barbour. She was unopposed for reelection in 2014. The Mississippi Poultry Association Political Action Committee is supporting Judge Carlton.

In the 5th District, Judge Smith, who was appointed by Gov. Tate Reeves, was sworn in in January 2021. He was a district attorney on the Gulf Coast prior to his appointment. Smith faces Clay Caldwell, a Biloxi attorney. The Mississippi Poultry Association Political Action Committee is supporting Judge Smith.

District 5 includes the counties of Forrest, George, Greene, Hancock, Harrison, Jackson, Lamar, Pearl River, Perry, Stone, Wayne (split with District 3).

In other judicial elections, the contested circuit and chancery court elections are shown in the lists on this page. In districts where there are more than two candidates and no one receives, a majority, the runoff will be November 29. One legislator is seeking a judgeship – Democrat Rep. Debra Gibbs of Jackson is running for Circuit Court judge in District 7 in Hinds County.



Speaking of the Legislature, there will be one special election to fill a second vacancy in the House. After the death of Republican Rep. Lynn Wright of Columbus in June, Gov. Tate Reeves set Nov. 8 as the date for the special election. The two candidates in House District 37 in Clay, Lowndes, and Oktibbeha counties are: Andy Boyd and David Chism, both of Columbus.

If no candidate receives a majority of the votes cast in the special election, a runoff election will be held on November 29, 2022. The winner in the special election will serve the remainder of Wright's term and must qualify in January for the 2023 elections in the new district that includes Clay, Lowndes, and Monroe counties.

In a July special election, Jeffery Hulum III of Gulfport won a special election in House District 119 to replace Democrat Rep. Sonya Williams-Barnes, who resigned. He is also a Democrat.

The last day to register to vote by mail or in the circuit clerk's office to vote is Oct. 10.



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#### CIRCUIT COURT RACES

Incumbents 2nd Circuit District (Place 1) (Hancock, Harrison, Stone) Lisa P. Dodson Stephen J. Maggio

**3rd Circuit District** (**Place 2**) (Marshall, Benton, Tippah, Lafayette, Union, Calhoun, Chickasaw) Shirley Byers J. Kelly Luther

6th Circuit District (Place 2) (Adams, Franklin, Wilkinson, Amite) Eileen M. Maher <u>Debra W. Blackwell</u> Timothy David Blalock

**7th Circuit District** (**Place 1**) (Hinds) David Linzey Adrienne Wooten

**7th Circuit District** (**Place 2**) (Hinds) Debra Gibbs Bryant D. Guy Trent L. Walker Wendy S. Wilson-White

**12th Circuit District** (**Place 1**) (Forrest, Perry) <u>Bob Helfrich</u> Gay L. Polk-Payton

16th Circuit District (Place 1) (Clay, Oktibbeha, Lowndes, Kemper) James T. Kitchens, Jr. Chuck Easley

16th Circuit District (Place 3) (Clay, Oktibbeha, Lowndes, Kemper) P. Trina Davidson Brooks Mark A. Cliett Michelle Easterling Bennie L. Jones, Jr.

Mississippi Court of Appeals Districts **19th Circuit District** (**Place 3**) (Green, George, Jackson) Stephen W. Burrow Shon Ellerby Calvin D. Taylor

#### CHANCERY COURT RACES

**5th Chancery District** (**Place 3**) (Hinds) Gayla Carpenter-Sanders Tametrice E. Hodges Damon R. Stevenson

9th Chancery District (Place 2) (Sunflower, Washington, Humphreys, Issaquena, Sharkey Warren) Renia A. Anderson Debra M. Giles

11th Chancery District (Place 2) (Holmes, Yazoo, Madison, Leake) Cynthia L. Brewer Abby G. Robinson

13th Chancery District (Place 1) (Simpson, Jasper, Lawrence, Jefferson Davis, Covington) David Shoemake Albert Turnage

16th Chancery District (Place 2) (Greene, George, Jackson) Ashlee Cole Tanya Hasbrouck



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### GROWING THE FLOCK: FOUR NEW FACULTY IN MSU POULTRY SCIENCE DEPARTMENT

#### TWO TENURE-TRACK FACULTY



*Dr. Tim Boltz* 2022, respectively under the direction of Dr. Joe Moritz. While at WVU, Dr. Boltz gained practical and research experience in poultry nutrition, feed manufacture, and feed microbiology work, while

2022)

also managing the WVU research feed mill. *Focus:* Dr. Boltz currently has one MS student and is working to build his research program, which will focus on poultry nutrition and feed hygienics. Dr. Boltz has 5 years of research experience in poultry nutrition, feed manufacture, and feed microbiology and has 8 peer-reviewed publications in poultry science journals. Boltz will teach Poultry Nutrition and rotationally teach Undergraduate

Seminar, while also developing a new course related to Feed Manufacture. Boltz looks forward to interacting with the Mississippi Poultry Industry and stakeholders to help address nutrition and feed manufacture needs.



Dr. Reshma Ramachandran

#### Dr. Reshma Ramachandran, Assistant Professor in Reproductive Physiology, 60% Research/40% Teaching (August 2022) *Hometown:* Kerala, India *Education Background and*

Dr. Tim Boltz. Assistant Professor in

Poultry Nutrition and Feed Hygiene,

Experience: Dr. Boltz received his B.S.

from Colorado State University in

2017. He then continued his education

at West Virginia University, earning his

M.S. and Ph.D. degrees in 2019 and

50% Research/50% Teaching (May

Hometown: Chevenne, Wyoming

**Education Background and** 

*Experience:* Dr. Ramachandran earned her bachelor's degree in veterinary science from Kerala Veterinary and Animal Sciences University and her MS degree in veterinary physiology from Indian Veterinary Research Institute. She then received her Ph.D.

in poultry science focused on reproductive physiology from Mississippi State University under the guidance of Dr. Chris McDaniel. Her doctoral research was focused on understanding the role of different physiological and nutritional factors, such as parthenogenesis and dietary supplementation of prebiotics and probiotics, on reproductive performance of poultry. After receiving her doctorate in 2018, she received postdoctoral training on molecular microbiology under the guidance of Dr. Hossam Abdelhamed, Department of Comparative Biomedical Sciences at MSU. In 2019, she moved back to poultry science as a postdoctoral associate to work on a USDA-ARS funded project on mitigation of avian pathogenic *Escherichia coli* (APEC) infections in poultry and to teach the avian reproduction course. In 2021, she began her research program as an assistant research professor in poultry science on mitigation of bacterial pathogens in poultry breeding stock to prevent vertical transmission to progeny. She has been collaborating with integrators and veterinarians in Mississippi to obtain APEC isolates from diseased breeder flocks for virulence and antimicrobial resistance characterization; and this knowledge will be used to develop effective alternative strategies to control APEC infections.

*Focus:* Dr. Ramachandran will primarily focus on poultry reproductive physiology and health and improving the overall reproductive performance of broiler breeders. She has already secured competitive funding to understand the relationship between reproductive tract microbiome in broiler breeder reproductive performance, and a USPOULTRY grant to study the vertical transmission potential of bioluminescent *Salmonella* Reading in turkey breeders. She currently mentors two MS students and two undergraduate students. Ramachandran will continue teaching avian reproduction and will also teach avian anatomy and physiology. She plans to complement her research and teaching program with service activities that will address the poultry breeder/hatchery education and industry needs.

#### TWO EXTENSION FACULTY



Mrs. Tannah Christensen, Extension Instructor in Youth Programming (July 2022) *Hometown:* Mathiston, MS *Education Background and* 

*Experience:* In 2011, Christensen completed her Bachelor of Business Administration from Mississippi State University and began her career in the Poultry Science Department. Through the years, Christensen has served in several roles and capacities for the State and University. After her increased involvement in Extension youth

Mrs. Tannah Christensen

programming for the Department of Poultry Science, she sought additional knowledge to better serve the state of Mississippi and educate its youth in poultry and the industry. While continuing her duties as Program Coordinator, Christensen graduated with her MS degree in Agricultural and Extension Education in Fall 2021 under the direction of Dr. Donna Peterson. Christensen's research consisted of the development, implementation, and evaluation of the Hybrid-Online Hatch-out Program. Developed with the involvement of Dr. Jessica Wells (Assistant Clinical/ Extension Professor in Poultry Science), the Hybrid-Online Hatchout Program explored an alternative method to the existing Hands-on Hatch-out Program offered to the youth in the state of Mississippi. Through this research, an even greater passion for teaching and developing creative opportunities to disseminate information emerged.

**Focus:** Christensen aims to increase youth knowledge of poultry and the industry's impact on our society. Representing increased Poultry Extension capacity within the Poultry Science Department at Mississippi State University, she also aims to collaborate with her colleagues to bridge the gaps and fulfill the state's Poultry Extension needs.

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#### Growing the Flock... continued from page 17



Mr. Jonathan Moon

Mr. Jonathan Moon, Extension Instructor in Commercial Poultry Production (June 2022) Hometown: Meridian, MS Education Background and Experience: Moon completed his Bachelor of Science in Poultry Science, with an emphasis in business, in 2006 from Mississippi State University. After graduation, Moon began his

career in the poultry industry

with an integrated broiler

company, working as both an Assistant Hatchery Manager and Broiler Service Technician for 9 years. In 2016, he began working at Mississippi State University serving as Research Coordinator and Farm Manager in the Department of Poultry Science. Shortly after, Moon began pursuing an MS degree, with a focus on cooling broilers with a commercial sprinkler system; he completed this degree in May 2022. *Focus:* Moon will be servicing the commercial side of the poultry industry in Mississippi, as well as collaborating with his colleagues to enhance the visibility of the Mississippi State Poultry Science Department and Extension to the state of Mississippi and beyond. Additionally, Moon will draw upon his previous work experience and connections within the industry to teach the department's Broiler Production class and lab. ■

### MSU'S WAMSLEY RECEIVES NATIONAL TEACHING AWARD

MSU Poultry Science Professor Dr. Kelley Wamsley won the Novus International Teaching Award at the recent national meeting of the Poultry Science Foundation.

Several MSU students also won awards the meeting.

This award is given to recognize that excellence in teaching is basic to the future welfare of the poultry industry and to aid continued professional improvement

through travel, study, and other means. Kelley Wamsley has a 40% teaching appointment where she serves as the Department's Graduate Coordinator and teaches Undergraduate Seminar, Graduate Seminar, Advanced Graduate Seminar, Feed Manufacture, and Poultry Evaluation.

Wamsley also assists in a study abroad trip to New Zealand, as well as co-advises the Mississippi State poultry science club and poultry judging team. She has a 60% research appointment, which focuses on optimizing broiler performance through physical feed quality, AA and energy formulation strategies, and the practical application of feed additives and alternative feed ingredients.

Wamsley has given 26 invited presentations, with 10 being international. She has over 140 publications, including abstracts and conference proceedings, of which 43 are refereed journal articles. She has mentored 10 international visiting scholars and graduated 4 PhD and 6 MS students. She currently mentors 3 MS students, 1 PhD student, and 10 undergraduate students within her lab.



Deepa Chaudhary, Certificate of Excellence in Genetics and Molecular Biology

Deepa Chaudhary is a master's student working under the direction of Dr. Li Zhang at the department of poultry science, MSU. The experience she gained working with poultry while enrolled in an interdisciplinary study [B.V. Sc. and A.H. degree from Agriculture and Forestry

Deepa Chaudhary

University (AFU), Nepal] helped her develop a research interest in poultry disease diagnosis and prevention, particularly in microbiology and food safety. Her research project is related to early disease diagnosis.



Dr. Kelley Wamsley



Hudson Thames, Certificate of Excellence in Microbiology and Food Safety

Hudson Thames grew up in the coastal town of Charleston SC. Originally wanting to pursue veterinary medicine, he received a B.S. in Animal Science at Mississippi State University. However, his love of food led him to pursue further education in food safety and microbiology under the

Hudson Thames

mentorship of Dr. Anuraj Theradiyil Sukumaran within the Poultry Science department at Mississippi State University. After completing his M.S. degree in 2021, Hudson is now entering the second year of his Ph.D. under the supervision of Dr. Sukumaran. Throughout his academic career, Hudson has investigated Salmonella and Campylobacter in poultry processing, including the prevalence of these pathogens on broiler meat during processing, as well as the efficacy of antimicrobials against various strains of Salmonella.



### Gerald "Rodney" Self, Jr., PSA undergraduate student travel award

Gerald "Rodney" Self, Jr. was born and raised in Madison, Mississippi. Upon completion of high school, he studied Poultry Science at Mississippi State University with a concentration in Pre-Veterinary Medicine. Rodney conducted undergraduate research during his time at Mississippi State University on "The Behavioral, Welfare, and Production

Gerald "Rodney" Self, Jr.

Effects of Late-Stage Cage-Raised Laying Hens in a Cage-Free Environment." He was selected for a student travel award for his research and honored at the 2022 Poultry Science Annual Conference. During the study, Rodney discovered that Hy-Line W-36's possesses the capability to adjust in a cage-free housing system, even after being raised in a caged system for a majority of the hen's lifespan. After graduation, he then began his Master of Science degree in Poultry science under Dr. Pratima Adhikari. He will be conducting two research studies this fall examining gas emissions in poultry excreta and digestibility of certain chemical elements. The other study will be examining the effects of coccidiosis vaccine on pullets when added to poultry diets.

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### PERMIT BOARD'S POULTRY FARM SITING PROCESS IS UPHELD BY MISSISSIPPI COURT RULING

John E. Milner, MPA Counsel - Brunini, Grantham, Grower & Hewes, PLLC



If you are building a new poultry farm or expanding, you can now have better confidence that, if the Mississippi Department of Environmental Quality (MDEQ) determines that your dry litter poultry permit application is complete – after their regulatory inspection and without opposition from surrounding landowners - your application will be entitled

to be granted by the Mississippi Environmental Quality Permit Board (Permit Board). This conclusion is supported by a Mississippi court ruling in a long-running contested case that has finally ended.

After five years, a significant Mississippi environmental permitting matter concerning the siting of a poultry farm has ended while on appeal due to the sale of the property on which the farm was to be sited. Although there is no final legal ruling from the Mississippi Supreme Court concerning the interpretation of the Permit Board siting criteria at issue in the case, it is nevertheless important to note that (1) the Permit Board upheld the prospective poultry farmer's compliance with the Permit Board's siting criteria and (2) the county chancery court judge affirmed the Permit Board's ruling regarding the siting criteria.

Factually, this case concerns a 2017 application to the Permit Board, through its staff, by Jimmy Le d/b/a Le Poultry ("Le" or "Le Poultry") for permits to construct and operate a dry litter poultry farm on property he owned in Osyka, Mississippi ("the Le Poultry Site"). In October 2017, Le purchased the Le Poultry Site with the intention of building and operating an 8-house dry litter poultry farm and building a home. In order to construct and operate a dry litter poultry farm in Mississippi, a poultry farmer must obtain coverage under the Mississippi Multimedia General Pollution Control Permit for a Dry Litter Poultry Animal Feeding Operation General Permit ("the Poultry Permit"). After MDEQ staff determined the general permit coverage applications and submissions are complete, MDEQ's regional office conducts a site inspection to evaluate whether the proposed site complies with the regulations. The site inspection, includes but is not limited to, an evaluation of compliance with the regulatory buffer zones, which require, at a minimum, a 600-foot buffer between the planned location for the production area and the nearest occupied dwelling and a 150-foot buffer between the planned location of the production area and the nearest occupied dwelling and a 150-foot buffer between the planned location of the production area and the nearest adjoining property line. In this case, an MDEQ staff member inspected the Le Poultry Site on January 22, 2018. The MDEQ staff member measured Le's proposed production area at 1,138 feet from the nearest occupied dwelling and 217 feet from the nearest property line. Accordingly, the MDEQ staff person determined the Le Poultry Site was fully in compliance with the regulatory buffer zones siting requirements.

On March 28, 2018, less than two weeks prior to the scheduled Permit Board public meeting, and more than two months after the site inspection, some of the Petitioners moved a single-wide mobile home into the buffer zone, approximately

300 feet away from the proposed site for Le's production area. Despite receiving notice of the proposed farm in November 2017, the Petitioners did not provide MDEQ or Le with any notice they intended to move a mobile home within the buffer zone. On April 3, 2018, an MDEQ staff member visited the Le Poultry Site as part of his preparation for the April 10th Permit Board meeting. The MDEQ staff member noted the presence of the Petitioners' newly sited mobile home approximately 300 feet south of the proposed site of Le's production area. This was the first notice MDEQ and/or Le had of the Petitioners' alleged intent to establish an occupied dwelling within the buffer zone.

During most of 2018 and into 2019, (an experienced private attorney) conducted a thorough inquiry on behalf of the Permit Board, including briefs and arguments presented by all parties. He (1) determined that Le had satisfied all of the regulatory pre-requisites for obtaining the permit coverages needed to construct and operate a dry litter poultry farm, (2) recommended that the Permit Board issue Le the needed permit coverages without the need for an evidentiary hearing. On September 10, 2019, the Permit Board entered its Findings of Fact and Conclusions of Law, which (1) affirmed the hearing officer's determinations that the siting criteria and all other permit requirements had been satisfied and (2) issued the permit coverages to Le for the for the Le Poultry Site.

The Pike County Chancery Court issued its ruling on June 21, 2021. The Chancery Court affirmed the Permit Board's ruling that the Le Poultry Site was in compliance with the regulatory buffer zones and other siting criteria. The Chancery Court held the Permit Board's interpretation of its siting criteria (at 11 Miss. Admin. Code Part 6, Rule 1.1.4.C.5.) was reasonable, and thus, that compliance with the regulatory siting criteria was established during the site inspection on January 22, 2018approximately two months prior to the Petitioners' moving their mobile home within the 600 foot buffer zone. Additionally, the Chancery Court held "[t]he permit application itself, the acceptance of the application as complete, the January site inspection, the careful consideration by [the hearing officer] and his subsequent recommendation to the [Permit Board] all contain evidence which supports the ultimate interpretation of the siting criteria, the Chancery Court remanded other issues back to the Permit Board "for a full evidentiary hearing on the issue of the sufficiency and completeness of Le Poultry's Permit Applications" on those issues.

Le timely filed a notice of appeal to the Mississippi Supreme Court and Petitioners subsequently filed a notice of crossappeal. During the Supreme Court briefing period, on the joint motion of all parties, the Supreme Court entered its February 7, 2022 order that dismissed all appeals since Le sold the Le Poultry Site property and was therefore no longer seeking to construct a poultry farm there.

As stated earlier, the importance of this matter for the poultry industry is that the Permit Board's administrative process for siting poultry farms has been upheld judicially in this matter, although without a final judicial determination by the Mississippi Supreme Court since the appeals were voluntarily



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#### Permit Board's Poultry Siting Process... continued from page 25

dismissed due to Le's sale of the property. The integrity of this siting process was preserved since the moving of the mobile home into the buffer zone after the MDEQ had conducted its site evaluation was not allowed to create non-compliance with those buffer zone setbacks. This case is also an important message to the poultry industry to conduct a full and complete investigation of the area in which poultry farms are to be sited to ensure, as much as is feasible, that there is no contiguous landowner or community opposition to the siting of the poultry farm. If there are siting issues, both objective and subjective, they must be dealt with well in advance of the Permit Board permit application submission so that they can be resolved before the application evaluation process is conducted by MDEQ.

### GARY JACKSON NAMED MSU ASSOCIATE VICE PRESIDENT FOR OUTREACH AND ENGAGEMENT

STARKVILLE, Miss.—A long-serving Mississippi State University educator and administrator has been selected to fill a new leadership position focused on university outreach and engagement activities.



MSU Extension Service since 2011, will fill the newly created position of associate vice president for outreach and engagement, effective Sept. 1. Jackson will be charged with strengthening and coordinating university outreach activities to better meet stakeholder needs at the local, state, national and international levels. The new position reports to the provost and executive vice president, vice president for the

ary Jackson, who has

Userved as director of the

Gary Jackson

Division of Agriculture, Forestry and Veterinary Medicine and the vice president for research and economic development. Steve Martin, currently associate director for county operations, will serve as interim Extension director.

The new position is based on recommendations developed by the provost's Outreach and Engagement Task Force, which has evaluated MSU's current outreach efforts and provided recommendations for improving campus-wide coordination among the multitude of academic colleges, research centers and service units that carry out outreach and engagement activities.

"I want to thank the task force for their important work and recommendations, and I want to



Steve Martin

thank Dr. Jackson for taking on this role," said MSU President Mark E. Keenum. "Because of our long-standing land-grant mission, MSU has always had a large presence in our state and the communities we serve. We have a track record of developing mutually beneficial relationships with an incredibly diverse set of partners, and I know that will continue to grow as we better coordinate our efforts internally." "Outreach and engagement are a vital part of our landgrant mission and something that has been part of our DNA throughout the university's 144-year history," said MSU Provost and Executive Vice President David Shaw. "As we assess and grow these efforts, I am excited to have Dr. Jackson providing university-wide leadership in this area, which will only strengthen the impact MSU makes in our state, nation and world."

A two-time MSU agricultural and extension education graduate, Jackson brings extensive academic and administrative experience to the associate vice president position. He has been a member of the College of Agriculture and Life Sciences faculty since 1990, working as an associate dean and as director of the School of Human Sciences. He worked in the Office of the Provost as interim associate vice president of academic affairs before spending the last 11 years as director of the MSU Extension Service.

"Extension has long been a pillar of MSU's service mission, providing the university with a presence in every Mississippi county," said Keith Coble, vice president for the Division of Agriculture, Forestry and Veterinary Medicine. "Gary's decade of experience leading Extension makes him a natural fit for this position. Additionally, I know Extension will continue its important role under the interim leadership of Steve Martin."

MSU is nationally recognized for its outreach and engagement efforts, having earned the Community Engaged Classification from the Carnegie Foundation, as well as the Innovation and Economic Prosperity University designation from the Association of Public and Land-Grant Universities. The university's Center for Community-Engaged Learning, Office of Student Leadership and Community Engagement, as well as the Maroon Volunteer Center, coordinate campus community engagement, service-learning and volunteerism efforts. The MSU Extension Service also has a presence in every Mississippi county as it delivers education and research that changes lives. The university also embraces its role as a catalyst for economic development in Mississippi by leveraging research activity to create new economic opportunities in the state.

"Our outreach activities have grown hand-in-hand with our research activity, bolstering the powerful combination of worldclass research and the commitment to make our world a better place," said MSU Vice President for Research and Economic Development Julie Jordan. "I look forward to working with Dr. Jackson as we broaden the connections between the university's research and engagement initiatives."



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### THE EMERGENCY **ROAD AND BRIDGE REPAIR** FUND IS WORKING

n the four years, since it was created, the Emergency Road and Bridge Fund (ERBRF) has pumped \$446 million into repairing roads, but mainly bridges, across the state, with one quarter spent in poultry producing counties.

The three funding rounds the Legislature has approved since 2018: \$250 million in 2018, \$89 million in 2021 and \$100 million in 2022 have begun solving the problem that saw the U.S. Department of Transportation inform Mississippi officials that at least 83 deficient bridges needed to be closed in 2018. Then Gov. Phil Bryant declared a state of emergency and in August of 2018, the Legislature created several funding streams for transportation needs. The ERBRF is to specifically address the emergency situations, especially posted and closed bridges.

The Miss. Transportation Commission has funded 241 projects in counties, cities and on Miss. Department of Transportation highways. In terms of projects 218 have been on county roads, 14 in municipalities and nine on MDOT highways.



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In terms of money, \$350.3 million or 79 percent has been spent on county projects, \$71.7 million or 16 percent for MDOT projects, and \$23.7 million or 5 percent for municipal projects.

MDOT staff use a data driven process in selecting projects from those submitted by local governments and state agencies. MDOT on its website notes, "Through collaboration and input from the ERBRF Advisory Board and local governments, the following key criteria have been incorporated into the project selection process: Safety; Emergency Vehicle Access; Condition of Bridges; Economic Impacts; Project Readiness; Traffic Volume; Truck Volume; Facility Type; Regional Significance; Innovative Financing or Design; and Access to Schools.

MPA has one of 10 seats on the ERBRF Advisory Board created by the Legislature in 2018 when the fund was created.

MDOT recently released a list of all the projects in the first four years of the program. The counties, including cities in those counties that have been awarded projects, receiving more than \$10 million are:

Jackson County	\$ 24,635,561.22
Grenada County	\$ 22,229,669.00
George County	\$ 18,749,912.00
Forrest County	\$ 16,075,237.04
Wayne County	\$ 14,603,775.45
DeSoto County/Southaven	\$ 12,470,090.00
Marshall County	\$ 12,123,331.00
Wilkinson County	\$ 10,010,839.25





continued on page 33







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#### ERBRF Funding continued from page 31

Taking the top 24 poultry producing counties based on the 2017 Census of Agriculture, a combined \$81 million in ERBRF funds has been invested in repairing bridges in those counties. If you include three counties that have processing plants but are not in the top 24 in production, the total is \$113.8 million. Two counties in the state have received no funds, they are Covington and Lamar.

The first round of ERBRF funding came from \$250 million in state general obligation bonds, the

second round from federal COVID relief funds that MDOT received in 2021, and the third earlier this year came from surplus state tax revenue the state took in in last year.

Revenues are again exceeding estimates for the current fiscal year and MPA believes the Legislature should divert some of the funds to a fourth round of ERBRF grants.

A complete list of the projects and amounts are on the MPA website www.mspoultry.org.

Total of funds allocated so far is \$446 million which is \$3 million

less than the \$449 million approved since some projects came in less than projected.

Taking out the more expensive MDOT projects, the average project cost for cities and counties is \$1.6 million. The median project cost (half above, half below) is \$908,330. The projects range from \$95,931 on Highpoint-Weir Road in Winston County to \$22.2 million for a series of bridges on one road in Grenada County.

### FRIED EGG PIZZA

Mary Alice Cain, M.S., R.D., L.D., USAPEEC's Registered Dietitian

#### PREPARATION

- 1) Pre-heat oven to 400 degrees F. Remove dough and shape into crust on an oiled pan.
- 2) Sauté onion in 1 Tbsp of oil in a skillet until clear and wilted. Add bell pepper and cook 2-3 minutes more.
- 3) Spread desired amount of sauce over pizza dough, then top with both the cooked and raw veggies. Drizzle remaining 1 Tbsp of oil over veggies, season with salt and pepper, then sprinkle a handful of cheese over the top.
- 4) Bake in oven for 8-10 minutes or until crust and veggies are golden. Pull pizza from oven and crack 1-2eggs on top. Place back in oven and cook until desired doneness for the eggs.

#### **INGREDIENTS**

1 pre-made whole wheat pizza dough

1 jar pizza sauce

Your choice of veggies, but I suggest:

- 1 onion, thinly sliced

- 1/2 pint cherry tomatoes, sliced in half

- 1 zucchini, thinly sliced
- 1 bell pepper, sliced into strips
- 3 handfuls of arugula
- 2 Tbsp. olive oil

1 handful of shredded parmesan cheese

1-2 eggs

salt and pepper

Take your homemade pizza to the next level by topping it with a fried egg! This recipe starts wit ha whole wheat crust for added fiber then builds upon that with tons of nutrient-packed veggies. And, the pièce de résistance is cracking an egg on top in the final minutes of baking for some extra protein.



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