



## *Friday Notes* from *MSSTATE Poultry Science*

**Friday Notes** - to keep you informed about noteworthy news from Poultry Science at Mississippi State....and let us hear from you as well!

### *Poultry Science Department News: Faculty, Staff, and Student Travel and Activities:*

- **Mrs. Wells**, assisted by **Holli Nutt** and **Dr. Parker**, conducted Hatch-out Projects at elementary schools in West Point, Choctaw County, and Starkville, April 6-10, 13-17, and 20-24.
- **Dr. Kiess** participated in the IACUC review of the Pearl Diagnostic Lab, April 10.
- **Drs. Beck** and **Zhai** visited Chongqing, Rongchong, and Beijing, China April 14-23 and gave the following talks:
  - 17<sup>th</sup> Annual Poultry Conference in Chongqing, China, and gave the following invited talks, April 16-19:
    - **Beck**, "Poultry production in the U.S.: Contemporary issues and quality control"
    - **Zhai**, "Modern broiler production: Cost and food safety challenges and solutions."
  - Animal Science students and faculty, Southwest University, Rongchong
    - **Beck (Zhai translating)**, "Poultry production in the U.S.: Contemporary issues and quality control."
  - China Academy of Agricultural Sciences, Beijing:
    - **Beck**, "Poultry Science at Mississippi State"
- **Dr. McDaniel** gave an invited talk, "Understanding male fertility and early embryonic mortality," for Hubbard at a Koch breeder managers meeting in Chattanooga, TN, April 29.
- **Dr. Tabler's** activities:
  - Invited presentation to DEQ visitors (Dr. Bohach), April 20, "Animal Agriculture Nutrient Management in Mississippi";
  - Travel to Cal-Maine with **Dr. Farnell** and **Marcelo Moreira** to demonstrate foam trailer and discuss cleaning/disinfection collaborations
  - Visited a Koch Grower in Carthage to discuss possible reasons for caked litter, April 28.

### *Condolences to...*

- **Mrs. Wells** and her family on the loss of her grandfather, Mr. Mack (Toot) Knight, 84, in Ellisville, April 26.

***Kudos to...***

- The following undergraduate students for their outstanding presentations at the MSU Undergraduate Research Symposium, April 23:
  - **Chrysta Beck**, (Dr. Peebles) “A comparison of meat-type and egg-type chicken embryos by determining shell and air cell temperature on days 12 through 18 of incubation”
  - **Ben Bishop** (Dr. Sharma) “Detection of antimicrobial resistance genes *Salmonella enterica* isolated from retail poultry products”
  - **Dana Dittoe** (Dr. Kiess) “Windrowing poultry litter after a broiler house is sprinkled with water”
  - **Josh Striplin** (Dr. Wamsley) “Effects of dietary Vitamin D and 24-OH D<sub>3</sub> levels on 0-53 d broiler chicken performance, processing, tibia ash, and serum Ca and 25-OH D<sub>3</sub>”
  - **Courtney Wade** (Dr. McDaniel) “Parental sex effects of selection for parthenogenesis on egg weight at set in mated Chinese Painted Quail”
- The Poultry Science Judging team (coaches **Dr. Wamsley** and **Mrs. Wells**) for their successes at the 68<sup>th</sup> Annual USPOULTRY Foundation Ted Cameron National Poultry Judging Contest at LSU, April 14-17:
  - **Marcus Hill** – 4<sup>th</sup> individual in Production
  - **Dana Dittoe** – 13<sup>th</sup> individual in Production
  - **Twain Womack** – 8<sup>th</sup> individual in Breed Selection; 10<sup>th</sup> in Market Products
  - **Team Award (Hill, Dittoe, Womack and Carlton Coleman)** – 5<sup>th</sup> in Market Products

***Recent Publication:***

- J. Pieniasek<sup>1</sup>, R. Stipanovic<sup>2</sup>, L. Puckhaber<sup>2</sup>, T. Wedegaertner<sup>3</sup>, **M. Farnell**<sup>4</sup>, J. Byrd<sup>2</sup> and J. Lee<sup>1</sup>, 2015, “Pressed, dehulled cottonseed meal: Effect on growth performance in broiler diets and retention of gossypol in tissues,” *European Poult. Sci.*, 79:1-9;  
<http://dx.DOI:10.1399/eps.2015.81>

***USDA-ARS Poultry Research Unit (PRU) News and Publications:***

- Dr. Leigh attended the 7<sup>th</sup> annual Egg Industry Issues Forum in Des Moines, IA, April 7-8.
- Invited talks at the Texas Commercial Egg Clinic, Bryan, TX, April 22
  - Dr. Purswell, “Effects of air velocity on laying hen performance and egg quality,”
  - Dr. Evans, “Controlling mycoplasma gallisepticum (MG).”
- Dr. Purswell and Engineering Technician Jason Johnson met with faculty and staff of the Universities of Kentucky and Illinois to discuss improvements to in-field measurements of fan performance, April 15-16.

***To our students: Good luck on your exams!! Best of everything for the summer and/or your futures as graduates! Be safe.***

## Running Cumulative List of Scientific and Extension Publications, 2015

### Poultry Science:

#### Refereed manuscripts inadvertently omitted in 2014:

- **Bello, A., W. Zhai, P. D. Gerard, and E. D. Peebles.** 2014. Effects of the commercial in ovo injection of 25-hydroxycholecalciferol on broiler posthatch performance and carcass characteristics. *Poultry Science* 93: 155-162. <http://dx.doi.org/10.3382/ps.2013-03389>
- **Bello, A., M.R. Bricka, P.D. Gerard, and E.D. Peebles.** Effects of commercial in ovo injection of 25-hydroxycholecalciferol on broiler bone development and mineralization on d 0 and 21 post-hatch. *Poultry Science*, Vol. 93:1055-1058. <http://dx.doi.org/10.3382/ps.2013-03608>
- **Peebles, E. D., R. Pulikanti, W. Zhai, and P. D. Gerard.** 2014. Relationships of incubational hatching egg characteristics to posthatch body weight and processing yield in Ross × Ross 708 broilers. *Journal of Applied Poultry Research*. 23:34-40. <http://dx.doi.org/10.3382/japr.2013-00784>
- **Zhai, W., E. D. Peebles, L. Mejia, C. D. Zumwalt, and A. Corzo.** 2014. Effects of dietary amino acid density and metabolizable energy level on the growth and meat yield of summer-reared broilers. *Journal of Applied Poultry Research*. 23 :501–515 <http://dx.doi.org/10.3382/japr.2014-00961>
- **Wang\*, X., E. D. Peebles, and W. Zhai.** 2014. Effects of protein source and nutrient density in the diets of male broilers from 8 to 21 days of age on their subsequent growth, blood constituents, and carcass compositions. *Poultry Science*. 93:1463-1474. <http://dx.doi.org/10.3382/ps.2013-03838>.
- **Bello, A., P. Y. Hester, P. D. Gerard, W. Zhai, and E. D. Peebles.** 2014. Effects of commercial in ovo injection of 25-hydroxycholecalciferol on bone development and mineralization in male and female broilers. *Poultry Science* 93:2734–2739. <http://dx.doi.org/10.3382/ps.2014-03981>
- **Nair, D.V., C.S. Sharma, R. Nannapaneni, B.S. Mahmoud, and A.S. Kiess.** Reduction of Salmonella on turkey breast cutlets by plant derived compounds. *Foodborne Pathogens and Disease* 11:981-987. [http://online.liebertpub.com/doi/abs/10.1089/fpd.2014.1803?url\\_ver=Z39.88-2003&rfr\\_id=ori%3Arid%3Acrossref.org&rfr\\_dat=cr\\_pub%3Dpubmed](http://online.liebertpub.com/doi/abs/10.1089/fpd.2014.1803?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub%3Dpubmed)

#### 2015 Papers and Abstracts

2015 International Poultry Scientific Forum and International Production and Processing Expo Abstracts: ([www.southernpoultrysciencesociety.org](http://www.southernpoultrysciencesociety.org))

- Comparative effects of in ovo versus subcutaneous vaccination and pre-placement holding time on post-hatch broiler performance **E. David Peebles, Taylor Barbosa, Timothy Cummings, John Dickson, Sharon Womack**
- Use of histomorphometric area measurements for determination of intestinal villus/crypt ratios in broiler chickens: comparisons to routine linear methods and documentation of age-associated intestinal changes **Floyd Wilson, Timothy Cummings, Taylor Barbosa, Chris Williams, John Dickson, Amanda Lawrence, David Peebles,**
- Effects of the in ovo injection of organic zinc, manganese, and copper on the hatchability and bone parameters of broiler hatchlings **Tiago Oliveira, Elizabeth Kim, Anna Caixeta, E. David Peebles**
- Parental sex effect of parthenogenesis on hatchability of Chinese Painted quail **Holly Parker, Aaron Kiess, Chris McDaniel**
- Nutrient analysis of Mississippi broiler litter **Tom Tabler, Ashli Brown, Gale Hagood, Morgan Farnell, Chris McDaniel, Jon Kilgore**
- Effect of pullet limestone particle size on performance and bone health of pullets and laying hens raised in deep litter systems **Pamela Eusebio-Balcazar, Sheila Purdum, Kathryn Hanford, Mary Beck**

- Effects of in ovo injection of Inovocox EM1 vaccine and turn-out times on broiler performance **Adebayo Sokale, E. David Peebles**, Christopher Williams.
- Both Bifidobacterium animalis and its metabolites impact broiler breeder sperm motility **Melissa Triplett, Christopher McDaniel, Aaron Kiess**.
- Effect of sub-lethal oxidative stress of chlorine on biofilm forming ability of various Salmonella strains **Janak Dhakal, Chander Sharma**
- Liquid application method (LAM), feed form (FF) and feed pan location effects on D28-56 Ross x Ross 708 male broiler performance and processing characteristics **Robert B Sellers**, John Boney, **Chris McDaniel**, Joseph S. Moritz, **Kelley G. S. Wamsley**
  - **Ben Sellers won a graduate student certificate of excellence award for this presentation and received a cash award of \$500.**
- Effects of varying coccidiosis control and inclusions of algal beta-1,3-glucan (ABG) on D0-59 Ross x Ross 708 male broiler performance and processing **Cameron Cardenas, Wei Zhai**, Robert Levine, **Kelley Wamsley**
- Effects of commercially available antibiotic alternatives on 0 to 41 d male broiler chicken intestinal morphology and microflora **Xi Wang, Yuhua Farnell, Aaron Kiess, Kelley Wamsley, Wei Zhai**
- Relationship among feed form, behavior and welfare, and growth performance using male broilers **Xianjiang Wen**, A.F. Liu, **M.M. Beck, K.G.S. Wamsley, B. Sellers, X. Wang, W. Zhai**
- Strain and feed form (FF) effects on D28-49 male broiler performance and D43 and 50 processing characteristics **Robert B. Sellers**, Paul B. Tillman, Joseph S. Moritz, **Kelley G. S. Wamsley**
- Parental sex effect of parthenogenesis on egg weight in mated Chinese Painted quail. **Courtney Wade, Holly Parker, Aaron Kiess, Chris McDaniel**
- Impact of oral Lactobacillus gavage on seminal and cloacal Lactobacillus concentrations in roosters **Juliana Hirai, Melissa Triplett, Christopher McDaniel, Aaron Kiess**
- Reduction of Salmonella on chicken skin by the sequential application of chemical treatments and Salmonella lytic bacteriophage preparation **Anuraj Theradiyil Sukumaran\*GS, Chander Shekhar Sharma**
- Relationships of eggshell, air cell, and cloacal temperatures of embryonated broiler hatching eggs during incubation. **Opeyemi Olojede, Katie Collins, Sharon Womack**, Patrick Gerard, **David Peebles**
- Effect of in ovo injection of F-strain Mycoplasma gallisepticum on the survivability of commercial layer embryos and chicks. **Katie Collins**, Scott Branton, Jeff Evans, **Sharon Womack, E. David Peebles**
- Commercially available mastic gum derived feed additive effects on zone of inhibition testing and phosphorus sparing using D3-21 male chick performance/tibia ash. **Jared Chandler, Aaron Kiess, Kelley Wamsley**
  - **Jared Chandler won a Don R. Sloan Undergraduate Research Award for this presentation and received a cash award of \$500.**
- Effects of commercially available Bacillus subtilis or B. licheniformis-based probiotics used alone or in combination with an antibiotic on 0-64 d broiler performance and processing. **Priscila Zorzetto, Wei Zhai**, David Harrington, **Aaron Kiess, Kelley Wamsley**.
- The January issue (Vol. 10, Number 4) of *Landmarks Magazine*, published by the Division of Agriculture, Forestry and Vet Medicine, contains two articles about the Poultry Science Department at <http://www.dafvm.msstate.edu/landmarks/15/jan2015.pdf> :
  - P. 14, “Poultry Teaching, Research, Extension, and Diagnostics The MSU Department of Poultry Science supports Mississippi’s top agricultural commodity.”
  - P. 18, “Parchman Poultry MSU Extension poultry specialists are addressing a growing fly and mosquito problem at the Mississippi State Penitentiary.”
- **Tom Tabler**, Ashli Brown, Gale Hagood, **Morgan Farnell, Chris McDaniel**, and Jon Kilgore, “Nutrient Content in Mississippi Broiler Litter” (study

funded by the Mississippi Farm Bureau Federation);  
<http://msucares.com/pubs/publications/p2878.pdf>.

- **Wang\*, X., E. D. Peebles, T. W. Morgan,** R. L. Harkess, and W. **Zhai.** 2015. Protein source and nutrient density in the diets of male broilers from 8 to 21 d of age: Effects on small intestine morphology. Poultry Science 94:61–67. <http://dx.doi.org/10.3382/ps/peu019>.
- **Tom Tabler,** Kelly Loftin, **Morgan Farnell, Jessica Wells,** and Haitham Yakout, “Bed Bugs: Difficult Pests to Control in Poultry Breeder Flocks,” <http://msucares.com/pubs/publications/p2881.pdf>

#### USDA-ARS

- Olanrewaju, H. A., J. L. Purswell, W. R. Maslin, S. D. Collier, and S. L. Branton. 2015. Effects of color temperatures (kelvin) of LED bulbs on growth performance, carcass characteristics, and ocular development indices of broilers grown to heavy weights. Poultry Science 94:338-344. <http://dx.doi.org/10.3382/ps/peu082>
- 2015 *IPSF Abstracts:* ([www.southernpoultrysciencesociety.org](http://www.southernpoultrysciencesociety.org))
  - Effects of light sources and intensity on growth performance and carcass characteristics of heavy broilers at 56 days of age. H. A. Olanrewaju, J. L. Purswell, S. D. Collier, and S. L. Branton.
  - E.J. Kim, J.L. Purswell, and S.L. Branton. 2015. Optimal inclusion rates of low-fat distiller’s dried grains with solubles (LF-DDGS) in male broilers aged 28 to 42 d of age