



## *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.*

- **Drs. Beck** and **Tabler** traveled to Greenville to discuss laying hen management practices, Jan 11.
- **Dr. Tabler's** travels Jan 6-25:
  - Visited three Sanderson Farms - McComb for water sample analysis, Jan 12
  - Conducted pullet checks on four Peco pullet farms at Sebastopol, Jan 17
  - Conducted thermal imaging photography of ceiling and side wall insulation at a Koch breeder farm at Kosciusko, Jan 19
  - In conjunction with the MS Board of Animal Health, conducted Composter and Mortality Workshop and provided information on mass mortality disposal site selection process and paperwork to Tyson and Koch growers
    - Carthage, Jan 24
    - Philadelphia, Jan 25
- **Drs. Beck** and **Tabler** participated in a discussion meeting with MAFES and outside personnel regarding litter usage proposals, Jan 13.
- **Dr. Beck** spoke to **Mrs. Wells's** *Animal Ag in Society* class on the upcoming Study Abroad in New Zealand, Jan 24
- **Dr. Beck** participated on a panel, "Promotion & Tenure Best Practices," for new faculty, Jan 24.
- The following faculty, staff, and students traveled to Atlanta, Jan. 28-Feb 2, to participate in the Poultry Science Association Board of Directors Meeting, the 38<sup>th</sup> Annual International Poultry Scientific Forum (IPSF) and the International Processing and Production Expo (IPPEXPO):
  - **Dr. Beck** - served as Executive Secretary of the Southern Poultry Science Society and ran the IPSF and the SPSS Business Meeting; served on the PSA Foundation Board
  - **Dr. Kiess** - chaired the Metabolism & Nutrition VII scientific session
  - **Dr. McDaniel** - served as a judge of student presentations
  - **Dr. Peebles** - served on the PSA Board of Directors as a Director
  - **Dr. Tabler** - participated in discussions with industry personnel about equipment acquisitions
  - **Dr. Wamsley** - served as co-chair for Posters and judged student papers; participated in numerous discussions with industry personnel regarding feed mill equipment
  - **Dr. Zhai** - participated in discussions about research collaborations with industry personnel

### *Welcome to...*

- Little **Mr. Thomas Lee Tuck** (7lb, 12oz), new son of Jessica and **Tom Tuck**, member of our Poultry Science Research Farm Crew, Jan. 26.

**Condolences to....**

- **Judias Neal**, member of our Farm Crew, on the death of his brother, Daniel Neal, on January 24, 2017, at the age of 70.

**Congratulations to....**

- **Tomi Obe**, MS grad student with **Dr. Kiess** (originally with **Dr. Sharma**), for winning a **Graduate Student Award of Excellence** for her presentation at the IPSF entitled, "*Homologous stress adaptation, antibiotic resistance, and biofilm formation of Salmonella Heidelberg on different food-contact surfaces following exposure to sub-lethal chlorine concentrations*," **Tomi Obe, Rama Nannapaneni, Chander Sharma**; Jan 31.
- **Mohit Bansal**, MS grad student with **Dr. Kiess** (originally with **Dr. Sharma**), for winning a **Graduate Student Award of Excellence** for his presentation at the IPSF entitled, "*Influence of chlorine induced sub-lethal oxidative stress on homologous stress adaptation and biofilm formation in Listeria monocytogenes*," **Mohit Bansal, Rama Nannapaneni, Chris McDaniel, Chander Sharma**; Jan 31.

**Other abstracts presented at the IPSF, Jan 30-3; complete abstracts may be found at <http://southernpoultrysciencesociety.org/pdfs/2017AbstractBook.pdf>**

- **Midian Nascimento dos Santos\*GS, Reshma Ramachandran, Kelley Wamsley, Aaron Kiess, Christopher McDaniel**, "*The impact of a dietary yeast fermentation product derived from Saccharomyces cerevisiae on semen quality and semen microbiota of aged White Leghorn roosters*"; Midian is an MS grad student with **Dr. McDaniel**
- **Reshma Ramachandran\*, Midian Nascimento Dos Santos, Christopher McDaniel**, "*Relationship between sperm-egg penetration and the duration of fertility in Chinese painted quail hens (Coturnix chinensis)*"; Reshma is a PhD grad student with **Dr. McDaniel**
- **Mary Beck\*, G. Tabler, Kelley Wamsley, Aaron Kiess**, "*MSU Poultry Science takes New Zealand!*"
- **Oluwaseun Durojaye\*, Katie Elliot, Edgar Peebles**, "*Air cell size profile and its relationship to eggshell temperature and water loss in broiler hatching eggs through day 12 of incubation*"; Seun is an MS grad student with **Dr. Peebles**.
- **Dana Dittoe\*, Chris McDaniel, Aaron Kiess** "*Effects of lactic acid bacteria and organic acids on the concentration of an antibiotic resistant strain of Salmonella Heidelberg, in vitro*"; Dana is an MS grad student with **Dr. Kiess**
- **Claudia Castaneda\*, Omar Gutierrez, Christopher McDaniel, Aaron Kiess**. "*In vitro evaluation of seven commercially available Bacillus spp based probiotic supplements and one Saccharomyces cerevisiae based prebiotic supplement and their effects on an antibiotic resistant strain of Salmonella Heidelberg*"; Claudia is an MS grad student with **Dr. Kiess**
- **Kacey O'Donnell\*, Xi Wang, Kelley Wamsly, Aaron Kiess, E. Peebles, Wei Zhai**. "*Effects of replacing antibiotics and anticoccidials with probiotics in broiler diets on growth performance*"; Kacey is an MS grad student with **Dr. Zhai**
- **Chrysta Beck\*, Pedro Mota, Kelley Wamsley, Christopher McDaniel, Aaron Kiess** "*Proving the concept that commercial in ovo delivery of a prebiotic and probiotics can positively impact broiler performance*"; Chrysta is an undergrad student working with **Dr. Kiess**
- **Alfred Blanch\*, Line Skjoet-Rasmussen, Elke Brockmann, Jannie Schnabl, Mickael Rouault, Dorthie Sandvang, Frank Jin, Aaron Kiess**, "*Confirmation of the presence of Enterococcus faecium M74 in the gastrointestinal tract of young chicks from eggs inoculated with GalliPro Hatch*"
- **Oluwaseun Durojaye\*, Edgar Peebles** "*Relationships of eggshell thickness to thermal gradients across the shell at the large and equatorial regions of embryonated*

- broiler hatching eggs*"; Seun is an MS grad student with **Dr. Peebles**
- **Na Dong\***, **Xi Wang**, **Wei Zhai** "*Effects of various levels of low-fat distiller's dried grains with solubles on intestinal developments of broilers from 28 to 54 days of age*"  
Dr. Dong is a visiting scientist working **Dr. Zhai**

***Running Cumulative List of Scientific and Extension Publications, 2016***

***The following oral talks and posters were presented at the IPSF, Atlanta, GA; \* indicates the presenting author and the abstracts may be found at [http://www.ippexpo.org/ipsf/docs/2016SPSS\\_AbstractBook.pdf](http://www.ippexpo.org/ipsf/docs/2016SPSS_AbstractBook.pdf):***

- **M65: Rosana Hirai\***, Omar Gutierrez, **Kelley Wamsley, Ana Oliveira**, “Effects of varying phytase inclusion in conjunction with xylanase supplementation on 0-56 d male broiler performance.”
- **M83: Dima White\***, **Aaron Kiess, Tom Tabler, Chris McDaniel, Yuhua Farnell, Shailesh Gurung, Marcelo Moreira**, Dan Zhao, **Morgan Farnell**, “Application of a commercially available cleaner and disinfectant via a compressed air foam system to decrease aerobic bacteria in pullet and layer houses.”
- **M84: Katie Collins\***, Scott Branton, Jeff Evans, **E. David Peebles**, “Evaluation of the potential influence of the disinfection cycle on the efficacy of F-strain Mycoplasma gallisepticum vaccine administered by in ovo injection to layer hatching eggs.”
- **M122: Mark Lemons\***, **Christopher McDaniel**, Joseph Moritz, **Kelley Wamsley**, “Influence of feed form (FF) and diet phase effects on 0-46 d broiler performance.”
- T146: Ivan Alvarado\*, **Kelley Wamsley**, Alejandro Banda, “Evaluation of the synergistic effect of the live attenuated infectious bursal disease vaccine 89/03 and a recombinant HVT-IBD against early infectious bursal disease challenge in commercial broilers.”
- **P200: Katherine Lott\***, **AJ Kawaoku, Holly Parker, Chris McDaniel**, “The male and female contribution to parthenogenesis-induced infertility in quail.”
- **P201: AJ Kawaoku\***, **Katherine Lott, Holly Parker, Chris McDaniel**, “Roles of the male and female quail in egg component alterations due to the parthenogenetic trait.”
- **P202: Pedro Mota\***, **Melissa Triplett, David Peebles, Christopher McDaniel, Aaron Kiess**, “Investigating the potential to introduce Lactobacillus acidophilus and Bacillus subtilis to the broiler embryo through commercial in ovo technology.”
- **P204: Edgar Peebles\***, Floyd Wilson, Taylor Barbosa, Timothy Cummings, John Dickson, **Sharon Womack**, “Comparative effects of in ovo versus subcutaneous vaccination and pre-placement holding time on scanning electron micrograph and histomorphometric measurements of small intestinal villus length and villus/crypt ratios in broiler chickens.”
- **P210: Alisha Moore\***, **Chander Sharma**, “Antimicrobial efficacy of acidified lactic acid, propionic acid, and lauric arginate against Salmonella in ground chicken frames.”
- **P318: Ana Beatriz Oliveira\***, **Wei Zhai, Kelley Wamsley**, “Feasibility of using Elusieve processing to improve the nutritional profile of feed ingredients used in commercial poultry diet formulation.”
- **NOTE: Ana received an Honorable Mention in the Don R. Sloan Undergraduate Research Competition for this presentation and a check for \$250.**
- Jason Barrett and **George Thomas Tabler**, “Private water well placement and sizing for poultry production,”  
<http://extension.msstate.edu/sites/default/files/publications/publications/p29>

53.pdf

- **Tom Tabler**, Jonathan Moyle, **Jessica Wells**, Morgan Farnell, “Composting Poultry Mortality: A Critical Daily Management Chore”  
<http://extension.msstate.edu/sites/default/files/publications/publications/p2960.pdf>  
**The following oral talks and posters were presented at the Poultry Science Association Meeting in New Orleans; \* indicates the presenting author and the abstracts may be found at**
  - Effects of antibiotic alternatives and Eimeria challenge on growth and carcass yields of male broilers. **Xi Wang\*<sup>1</sup>**, **E. David Peebles<sup>1</sup>**, **Aaron S. Kiess<sup>1</sup>**, **Kelley G. S. Wamsley<sup>1</sup>**, **Wei Zhai<sup>1</sup>**, <sup>1</sup>*Department of Poultry Science, Mississippi State University, Mississippi State, MS.*  
<http://m.poultryscience.org/PresDetail.aspx?presID=67980&prestyle=abs&prevpage=Search.aspx%3fquery%3dMississippi+State+U>
  - Comparison of thermal resistance of rugose phenotype of Salmonella Typhimurium with normal smooth morphology at different growth phases. **Janak Dhakal\*<sup>1</sup>**, Rama Nannapaneni<sup>1</sup>, **Chander S. Sharma<sup>1</sup>**, <sup>1</sup>*Mississippi State University, Starkville, MS.*  
<http://m.poultryscience.org/PresDetail.aspx?presID=68091&prestyle=abs&prevpage=Search.aspx%3fquery%3dMississippi+State+U>
  - Injecting GalliPro Hatch into fertile broiler hatching eggs using commercial in ovo technology and its effect on hatchability and early chick mortality. **Chrysta Beck\*<sup>1</sup>**, **Pedro Mota<sup>1</sup>**, **Christopher McDaniel<sup>1</sup>**, **David Peebles<sup>1</sup>**, Alfred Blanchet<sup>2</sup>, Mickaël Rouault<sup>2</sup>, **Kelley Wamsley<sup>1</sup>**, **Aaron S. Kiess<sup>1</sup>**, <sup>1</sup>*Mississippi State University, Mississippi State, MS*, <sup>2</sup>*Chr. Hansen, Hørsholm, Denmark.*  
<http://m.poultryscience.org/PresDetail.aspx?presID=68113&prestyle=abs&prevpage=Search.aspx%3fquery%3dMississippi+State+U>
  - Development of rugose morphotype of Salmonella Typhimurium following exposure to sub-inhibitory chlorine concentrations that exhibit chlorine resistance and strong biofilm forming ability.  
**Tomilola Obe\*<sup>1</sup>**, Rama Nannapaneni<sup>1</sup>, **Chander Shekhar Sharma<sup>1</sup>**, <sup>1</sup>*Mississippi State University, Mississippi State, MS.*  
<http://m.poultryscience.org/PresDetail.aspx?presID=68017&prestyle=abs&prevpage=Search.aspx%3fquery%3dMississippi+State+U>  
**Note: Tomi received a Student Award of Excellence for this presentation!**
  - Influence of feed form and diet phase on day 46 to 53 broiler performance and processing. **Mark E. Lemons\*<sup>1</sup>**, **Christopher D. McDaniel<sup>1</sup>**, Joseph S. Moritz<sup>2</sup>, **Kelley G. S. Wamsley<sup>1</sup>**, <sup>1</sup>*Department of Poultry Science, Mississippi State University, Mississippi State University, MS*, <sup>2</sup>*Department of Animal and Nutritional Sciences, West Virginia University, Morgantown, WV.*  
<http://m.poultryscience.org/PresDetail.aspx?presID=68042&prestyle=abs&prevpage=Search.aspx%3fquery%3dMississippi+State+U>
- Effects of ButiPearl supplementation on broiler performance, blood chemistry, and cecal fatty-acid analysis. **C. E. Ennis\*<sup>1</sup>**, J. DuCray<sup>2</sup>, A. Cox<sup>2</sup>, **K. G. S. Wamsley<sup>1</sup>**, <sup>1</sup>*Mississippi State University, Mississippi State, MS*, <sup>2</sup>*Kemin Industries Inc, Des Moines, IA.*  
<http://m.poultryscience.org/PresDetail.aspx?presID=67921&prestyle=abs&prevpage=Search.aspx%3fquery%3dMississippi+State+U>
- In vitro evaluation of four commercially available Bacillus spp. probiotic supplements and their effect on an antibiotic resistant strain of Salmonella Heidelberg.  
**Claudia D. Castañeda\*<sup>1</sup>**, Omar Gutierrez<sup>2</sup>, **Christopher D. McDaniel<sup>1</sup>**, **Aaron S. Kiess<sup>1</sup>**, <sup>1</sup>*Mississippi State University, Mississippi State, MS*, <sup>2</sup>*Huvepharma Inc, Austin, TX.*  
<http://m.poultryscience.org/PresDetail.aspx?presID=68015&prestyle=abs&prevpage=Search.aspx%3fquery%3dMississippi+State+U>
- Effects of dietary supplementation of antibiotic, anticoccidial, probiotic, and zinc on

meat quality of male broilers. **Xingyong Chen**<sup>\*1,2</sup>, **Xi Wang**<sup>1</sup>, Kezhou Cai<sup>3</sup>, Mark W. Schilling<sup>4</sup>, **Wei Zhai**<sup>1</sup>, <sup>1</sup>Department of Poultry Science, Mississippi State University, Mississippi State, MS, <sup>2</sup>College of Animal Science and Technology, Anhui Agricultural University, Hefei, Anhui, China, <sup>3</sup>School of Biotechnology and Food Engineering, Hefei University of Technology, Hefei, Anhui, China, <sup>4</sup>Department of Food Science, Nutrition and Health Promotion, Mississippi State University, Mississippi State, MS.

<http://m.poultryscience.org/PresDetail.aspx?presID=67924&prestyp e=abs&prevpage=Search.aspx%3fquery%3dMississippi+State+U>

- **P. Santa Rosa, H.M. Parker, A.S. Kiess, C.D. McDaniel**, 2016. Parthenogenetic embryos from unfertilized Chinese Painted Quail eggs alter albumen pH, gases, and ion concentrations during incubation. *Theriogenology*, 85:2:275-281. Doi:10.1016/j.theriogenology2015.09.023. <http://www.sciencedirect.com/science/article/pii/S0093691X1500494X>
- **P. Santa Rosa, H.M. Parker, A.S. Kiess, C.D. McDaniel**, 2016. Parthenogenesis in mated Chinese Painted Quail (*Coturnix chinensis*) hens decreases sperm-egg penetration and alters albumen characteristics. *Theriogenology*. Doi:10.1016/j.theriogenology.2016.05.025. <http://www.sciencedirect.com/science/article/pii/S0093691X16302266>
- **Kelley G.S. Wamsley**, 2016. Building US & European Collaborations: Antibiotic Use for Poultry in the US. Invited presentation, Bern, Switzerland. August 2016
- **Tom Taber, C. Reagan Sadler, and Jessica Wells**, "Gangrenous Dermatitis in Broilers," <http://extension.msstate.edu/sites/default/files/publications/publications/p2990.pdf>
- **Kiess, A. S.\*, J. Hirai, M. D. Triplett, H. M. Parker, and C. D. McDaniel**, 2016. Impact of Oral Lactobacillus Gavage on Rooster Seminal and Cloacal Lactobacilli Concentrations. *Poult. Sci.* 95 (8): 1934-1938.
- **Triplett M. D., H. M. Parker, C. D. McDaniel, and A. S. Kiess\***. 2016. Influence of 6 different Intestinal Bacteria on Beltsville Small White Turkey Semen. *Poult. Sci.* 95 (8): 1918-1926.
- **Tom Tabler**, News Release: MSU researchers cool poultry with sprinklers By [Ms. Bonnie A. Coblenz](#), MSU Extension Service, Senior Extension Associate <http://extension.msstate.edu/news/feature-story/2016/msu-researchers-cool-poultry-sprinklers>
- **Tom Tabler**, Jim Watson, Brigid Elchos, and **Jessica Wells**, "Poultry Growers Should Maintain Heightened Biosecurity Practices," <http://extension.msstate.edu/sites/default/files/publications/publications/p2995.pdf>
- **Tom Tabler**, "Misconceptions, Biosecurity and Food Safety in the Poultry Industry," MSFBF's Mississippi Agricultural Tour for Congressional Staffers, Aug 30.
- **Tom Tabler**, Jonathan R. Moyle, and **Jessica Wells**, "Rotary Drum Composting of Poultry Mortalities," <http://extension.msstate.edu/sites/default/files/publications/publications/p3012.pdf>

### **USDA-ARS Poultry Research Unit Publications:**

- Abstracts presented at the International Poultry Scientific Forum, Atlanta GA, Jan. 25-26; [http://www.ippexpo.org/ipsf/docs/2016SPSS\\_AbstractBook.pdf](http://www.ippexpo.org/ipsf/docs/2016SPSS_AbstractBook.pdf):
  - J.L. Purswell and S.L. Branton. 2016. Performance of an automated whole-house vaccination system.
  - J.E. Linhoss, J.L. Purswell, and J.D. Davis. 2016. Preferences of young chicks for varying radiant fluxes.
  - H. Olanrewaju, Influence of light sources and photoperiod on growth performance and carcass characteristics of heavy broilers at 56 days of age.

- *Abstracts presented at the PSA Annual Meeting, New Orleans, July 10-15:*
  - Direct and indirect transmissibility of attenuated and virulent *Mycoplasma gallisepticum* strains among caged layers. Jeffrey D. Evans\*<sup>1</sup>, Scott L. Branton<sup>1</sup>, Joseph L. Purswell<sup>1</sup>, Spencer A. Leigh<sup>1</sup>, Stephanie D. Collier<sup>1</sup>, <sup>1</sup>USDA-ARS Poultry Research Unit, Mississippi State, MS.  
<http://m.poultryscience.org/PresDetail.aspx?presID=68041&prestype=abs&prevpage=Search.aspx%3fquery%3dDirect+and+indirect+transmissibility+of>
  - Assessing the efficacy of a newly developed micro-aerosol for disinfection of the avian respiratory pathogen *Mycoplasma gallisepticum*. Jeffrey D. Evans\*<sup>1</sup>, Joseph L. Purswell<sup>1</sup>, Stephanie D. Collier<sup>1</sup>, <sup>1</sup>USDA-ARS Poultry Research Unit, Mississippi State, MS.  
<http://m.poultryscience.org/PresDetail.aspx?presID=68045&prestype=abs&prevpage=Search.aspx%3fquery%3dAssessing+the+efficacy>
  - Nitrogen-corrected apparent metabolizable energy of an exogenous carbohydrase added to diets formulated with low-fat distillers dried grains with solubles (LF-DDGS) from 0 to 28 d in broilers.  
Elizabeth J. Kim\*<sup>1</sup>, Michael E. Persia<sup>2</sup>, Jon Broomhead<sup>3</sup>, Xuimei Li<sup>3</sup>, Philip Lessard<sup>3</sup>, Mike Lanahan<sup>3</sup>, <sup>1</sup>ARS-USDA Poultry Research Unit, Mississippi State, MS, <sup>2</sup>Virginia Tech University, Blacksburg, VA, <sup>3</sup>Agrivida Inc, Medford, MA.  
<http://m.poultryscience.org/PresDetail.aspx?presID=67781&prestype=abs&prevpage=Search.aspx%3fquery%3dNitrogen-corrected>