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 38th 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 probiotic 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, Mickäel Rouault, Dorthe 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

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:

- **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 subtillis 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
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**¹, **E. David Peebles**¹, **Aaron S. Kiess**¹, **Kelley G. S. Wamsley**¹, **Wei Zhai**¹. ¹Department of Poultry Science, Mississippi State University, Mississippi State, MS.

- Comparison of thermal resistance of rugose phenotype of Salmonella Typhimurium with normal smooth morphology at different growth phases. **Janak Dhakal**¹, Rama Nannapaneni¹, **Chander S. Sharma**¹. ¹Mississippi State University, Starkville, MS.

- Injecting GalliPro Hatch into fertile broiler hatching eggs using commercial in ovo technology and its effect on hatchability and early chick mortality. **Chrysta Beck**¹, **Pedro Mota**¹, **Christopher McDaniel**¹, **David Peebles**¹, Alfred Blanch², Mickaël Rouault², **Kelley Wamsley**¹, **Aaron S. Kiess**¹. ¹Mississippi State University, Mississippi State, MS; ²Chr. Hansen, Hørsholm, Denmark.

- 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**¹, Rama Nannapaneni¹, **Chander Shekhar Sharma**¹. ¹Mississippi State University, Mississippi State, MS.

- Influence of feed form and diet phase on day 46 to 53 broiler performance and processing. **Mark E. Lemons**¹, **Christopher D. McDaniel**¹, Joseph S. Moritz², **Kelley G. S. Wamsley**¹. ¹Department of Poultry Science, Mississippi State University, Mississippi State University, MS; ²Department of Animal and Nutritional Sciences, West Virginia University, Morgantown, WV.

- Effects of ButiPearl supplementation on broiler performance, blood chemistry, and cecal fatty-acid analysis. **C. E. Ennis**¹, J. Ducray², A. Cox², **K. G. S. Wamsley**¹. ¹Mississippi State University, Mississippi State, MS; ²Kemin Industries Inc, Des Moines, IA.

- 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**¹, Omar Gutierrez², **Christopher D. McDaniel**¹, **Aaron S. Kiess**¹. ¹Mississippi State University, Mississippi State, MS; ²Huvepharma Inc, Austin, TX.

- Effects of dietary supplementation of antibiotic, anticoccidial, probiotic, and zinc on
meat quality of male broilers. Xingyong Chen\textsuperscript{1,2}, Xi Wang\textsuperscript{1}, Kezhou Cai\textsuperscript{3}, Mark W. Schilling\textsuperscript{4}, Wei Zhai\textsuperscript{1}, \textsuperscript{1}Department of Poultry Science, Mississippi State University, Mississippi State, MS, \textsuperscript{2}College of Animal Science and Technology, Anhui Agricultural University, Hefei, Anhui, China, \textsuperscript{3}School of Biotechnology and Food Engineering, Hefei University of Technology, Hefei, Anhui, China, \textsuperscript{4}Department of Food Science, Nutrition and Health Promotion, Mississippi State University, Mississippi State, MS.


- **Tom Tabler**, News Release: MSU researchers cool poultry with sprinklers

By **Ms. Bonnie A. Coblentz**, MSU Extension Service, Senior Extension Associate


- **Tom Tabler, Jim Watson, Brigid Elchos, and Jessica Wells**, “Poultry Growers Should Maintain Heightened Biosecurity Practices,”


- **Tom Tabler, Jonathan R. Moyle, and Jessica Wells**, “Rotary Drum Composting of Poultry Mortalities,”


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

  - 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:
  o Direct and indirect transmissibility of attenuated and virulent Mycoplasma gallisepticum strains among caged layers. Jeffrey D. Evans1, Scott L. Branton1, Joseph L. Purswell1, Spencer A. Leigh1, Stephanie D. Collier1, 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
  o Assessing the efficacy of a newly developed micro-aerosol for disinfection of the avian respiratory pathogen Mycoplasma gallisepticum. Jeffrey D. Evans1, Joseph L. Purswell1, Stephanie D. Collier1, 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
  o 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. Kim1, Michael E. Persia2, Jon Broomhead3, Xuimei Li3, Philip Lessard3, Mike Lanahan3, USDA-ARS Poultry Research Unit, Mississippi State, MS, 2Virginia Tech University, Blacksburg, VA, 3Agrivida Inc, Medford, MA.  
    http://m.poultryscience.org/PresDetail.aspx?presID=67781&prestype=abs&prevpage=Search.aspx%3fquery%3dNitrogen-corrected