



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.

- **Dr. Tabler** met with the MPA Poultry Management School planning committee in Pearl, Feb. 7.
- **Dr. Peebles** participated in a workshop entitled, "Connecting Teaching with Research" put on by the Center for Teaching and Learning, January 25, 2017.
- **Dr. Tabler** visited a Tyson breeder hen farm at Carthage to troubleshoot stray voltage issues, Feb. 8
- **Dr. Tabler** visited a Koch grower at Carthage to assess the broiler lighting program, Feb. 9
- **Drs. Kiess, Tabler, and Beck** met with an aquaculture specialist to discuss a proposal to investigate pathogen control mechanisms in poultry litter and processing plants, Feb. 9
- **Dr. Beck** discussed a CO₂ stunning process with a representative of a processing plant equipment dealer, Feb. 10.
- **Drs. Peebles and Zhai** hosted Dr. Ken Macklin from Auburn University, who is serving on two graduate student committees as an adjunct professor, Feb. 10.
- Dr. Beth Downey, associate professor in the MSU Library, presented a guest lecture on "Plagiarism, Citation, and the MSU Honor Code," to the Graduate Seminar, Feb. 3.
- Dr. Donna Gainer, professor in MSU's Department of Educational Psychology, presented a guest lecture in the Graduate Seminar, entitled, "A Discussion on TypeFocus," Feb. 10

Recent Publications:

- ***Inadvertently omitted from the list of abstracts presented at the International Poultry Scientific Forum in Atlanta last week:***
 - **Edgar Peebles**, Tiago Oliveira, Antonio Bertechini, Elizabeth Kim, Opeyemi Olojede, **Sharon Womack**, Patrick Gerard, "Effects of post-hatch holding time before placement on broiler body temperature during grow-out."
<http://southernpoultrysciencesociety.org/pdfs/2017AbstractBook.pdf>
- **Tom Tabler**, F. Dustan Clark, and **Jessica Wells**, "Choosing the right breed of backyard poultry."
<http://extension.msstate.edu/sites/default/files/publications/publications/p3036.pdf>

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:

- **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

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- **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*¹**, **E. David Peebles¹**, **Aaron S. Kiess¹**, **Kelley G. S. Wamsley¹**, **Wei Zhai¹**, ¹*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*¹**, Rama Nannapaneni¹, **Chander S. Sharma¹**, ¹*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*¹**, **Pedro Mota¹**, **Christopher McDaniel¹**, **David Peebles¹**, Alfred Blanch², Mickaël Rouault², **Kelley Wamsley¹**, **Aaron S. Kiess¹**, ¹*Mississippi State University, Mississippi State, MS*, ²*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*¹, Rama Nannapaneni¹, **Chander Shekhar Sharma¹**, ¹*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*¹**, **Christopher D. McDaniel¹**, Joseph S. Moritz², **Kelley G. S. Wamsley¹**, ¹*Department of Poultry Science, Mississippi State University, Mississippi State University, MS*, ²*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*¹**, J. DuCray², A. Cox², **K. G. S. Wamsley¹**, ¹*Mississippi State University, Mississippi State, MS*, ²*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*¹, Omar Gutierrez², **Christopher D. McDaniel¹**, **Aaron S. Kiess¹**, ¹*Mississippi State University, Mississippi State, MS*, ²*Huvepharma Inc, Austin, TX.*
<http://m.poultryscience.org/PresDetail.aspx?presID=68015&prestyle=abs&prevpage=Search.aspx%3fquery%3dMississippi+State+U>

meat quality of male broilers. **Xingyong Chen**^{*1,2}, **Xi Wang**¹, Kezhou Cai³, Mark W. Schilling⁴, **Wei Zhai**¹, ¹Department of Poultry Science, Mississippi State University, Mississippi State, MS, ²College of Animal Science and Technology, Anhui Agricultural University, Hefei, Anhui, China, ³School of Biotechnology and Food Engineering, Hefei University of Technology, Hefei, Anhui, China, ⁴Department of Food Science, Nutrition and Health Promotion, Mississippi State University, Mississippi State, MS.

<http://m.poultryscience.org/PresDetail.aspx?presID=67924&prestyle=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.theriogenology.2015.09.023. <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>

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

- **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**

- **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, 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**

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:
 - 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.

- Direct and indirect transmissibility of attenuated and virulent *Mycoplasma gallisepticum* strains among caged layers. Jeffrey D. Evans*¹, Scott L. Branton¹, Joseph L. Purswell¹, Spencer A. Leigh¹, Stephanie D. Collier¹, ¹USDA-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*¹, Joseph L. Purswell¹, Stephanie D. Collier¹, ¹USDA-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*¹, Michael E. Persia², Jon Broomhead³, Xuimei Li³, Philip Lessard³, Mike Lanahan³, ¹ARS-USDA 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>