



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.

- **Correction to the Judging Team report: Seth Walters** also participated on the MSU Collegiate Poultry Team and was inadvertently left off the list last week. **Dr. Wamsley** accompanied the MSU Collegiate Poultry Judging Team to the National Collegiate Poultry Judging Contest at Fayetteville, AR., Nov. 4-7; undergrad **Bryce Hollomon** served as assistant coach. Results were as follows:
 - **Dylan Stephens:** 4th individual, Division 2; 6th individual overall
 - **Jason Sousa:** 5th individual, Division 2; 3rd individual overall
 - **Team: Stephens, Sousa, Miranda Taylor and Seth Walters:** 4th overall; 3rd, Division 1; 4th, Division 2.
- **Dr. Zhai** hosted Wayne Farms growers who spoke in Broiler Production, Nov. 13.
- **Drs. Beck and Kiess** met with personnel from Phileo Lesaffre to discuss a research project, Nov. 14.
- **Dr. Wamsley** hosted personnel from Tyson who spoke in the Graduate Seminar and at the Poultry Club meeting, Nov. 15.

Recent Publications:

- Alexander J. Holtcamp, **Anuraj T. Sukumaran**, Abigail E. Schnedler, Brandon J. McClenton, Emery Kunze, Chris R. Calkins, Brandi B. Karisch, Derris D. Burnett, Thu T.N. Dinh,* 2019. "Effects of feeding endophyte-infected tall fescue seeds to stocker Angus steers on retail quality attributes of beef strip steaks," Meat Science 149: p 31-39. <https://doi.org/10.1016/j.meatsci.2018.11.007>
- P.T.T. Vu, A.J. Holtcamp, **A.T. Sukumaran**, M.V.V. Le, D.H. Nguyen, T.T.N. Dinh, 2018. Effects of market type and time of purchase on oxidative status and descriptive off-odors and off-flavors of beef in Vietnam. Meat Science 145: 399-406. <https://doi.org/10.1016/j.meatsci.2018.07.018>
- Anuraj T. Sukumaran, Alexander J. Holtcamp, Yan L. Campbell, Derris Burnett, Mark W. Schilling, Thu T.N. Dinh, 2018, "Technological characteristics of pre- and post-rigor deboned beef mixtures from Holstein steers and quality attributes of cooked beef sausage," Meat Science 145:71-78. <https://doi.org/10.1016/j.meatsci.2018.06.001>
- **Tom Tabler, Jessica Wells**, and Nikki Jefcoat, "Infectious Bronchitis in Backyard Flocks," https://en.engormix.com/poultry-industry/articles/infectious-bronchitis-backyard-flocks-t42341.htm?utm_source=notification&utm_medium=email&utm_campaign=2-1-0
- **Tom Tabler**, "Mortality composting the right way: Tips for poultry producers," <https://poultryhealthtoday.com/mortality-composting-the-right-way-tips-for-poultry->

Poultry Science

November 16, 2018

producers/?utm_source=Poultry+Health+Today+Newsletter&utm_campaign=6fcd4707f4-AAAP_antimicrobial_stewardship_PHT_1_8_2018_COPY_0&utm_medium=email&utm_term=0_5ac605299a-6fcd4707f4-315441937

Cumulative List of Scientific and Extension Publications, 2018

New at end of 2017:

- **DK Dittoe, CD McDaniel, T. Tabler and AS Kiess**, 2017. Windrowing poultry litter after a broiler house has been sprinkled with water. J of Appl. Poult. Res. <http://dx.doi.org/10.3382/japr/pfx034>
- F. Dustan Clark, Douglas Aldridge, **Tom Tabler**, and Jon Moyle, Poultry Farm Winterization Suggestions, Dec. 2017. https://poultry-science.uark.edu/resources/PDFs/AvianAdvice_December2017.pdf

- **Abstracts of the following presentations at the International Poultry Scientific Forum, Atlanta, GA, Jan 29-30 are available at:**
<http://www.ippexpo.org/ipsf/docs/IPSF-Abstract-Book.pdf>
 - **Undergraduate Student Presentations at IPSF, Atlanta, GA, Jan 29**
 - **Tiffani Allen***, **Aaron Kiess**, **Christopher McDaniel** Broiler hatchability following in ovo injection of *Lactobacillus animalis* or *Bacillus licheniformis*
 - **Chrysta Beck***, **Kelley Wamsley**, **Christopher McDaniel**, **Aaron Kiess** 21 day broiler performance after in ovo injection of individual or multiple probiotic bacteria
 - **Graduate Student Presentations at IPSF, Atlanta, GA, Jan 29**
 - **Reshma Ramachandran***, **Christopher McDaniel**, Live pigeon pox virus increases parthenogenesis of in vitro cultured Chinese painted quail eggs
 - **Reshma Ramachandran***, Midian Nascimento dos Santos, **Christopher McDaniel** Live pigeon pox virus vaccination increases parthenogen size in virgin Chinese painted quail (*Coturnix chinensis*)
 - **Andrew Brown***, Omar Gutierrez, **Mark Lemons**, Staci Loop, **Kelley Wamsley** Effects of energy density and enzyme inclusion strategy on 0-60 d Ross x Ross 708 male broiler performance, foot pad dermatitis, woody breast severity, and breast yield.
 - **Courtney Ennis***, **Kelley Wamsley** Growth performance and amino acid digestibility coefficients of broilers fed vegetarian versus conventional diets reared in a research and commercial setting during a 62 day grow-out
 - **Note: Courtney received an Award of Excellence for scientific content and quality of presentation for her poster presentation.**
 - **Rosana Hirai***, Leonel Mejia, Cesar Coto, Justina Caldas, **Christopher McDaniel**, **Kelley Wamsley** Determining the digestible lysine requirement of Cobb MV Å~ Cobb 500 male broilers during the first fourteen days of age
 - **Rosana Hirai***, Leonel Mejia, Cesar Coto, Justina Caldas, **Christopher McDaniel**, **Kelley Wamsley** The impact of feeding varying starter digestible lysine levels to Cobb MV Å~ Cobb 500 male broilers on growth performance and processing yields
 - **Saman Fatemi***, **Katie Collins Elliott**, Abiodun Bello, **Oluwaseun Durojaye**, Haijun Zhang, Bradley Turner, **E. David Peebles** Effects of in ovo-injected vitamin D3 sources on eggshell temperature and the early post-hatch performance of Ross 708 broilers
 - **Seyed Fatemi***, Haijun Zhang, **Katie Elliott**, **Oluwaseun Durojaye**, **E. David Peebles** Effects of in ovo injection of L-ascorbic acid on early

growth performance and systemic antioxidant capacity in broiler chickens

- **Abdulmohsen Alqhtani***, Tomi Obe, Christopher McDaniel, Aaron Kiess Identifying new antimicrobials that may improve broiler litter quality
- **Bo Zhang***, Kacey O'Donnell, Xi Wang, Wei Zhai Effects of antibiotics and probiotic additives on the intestinal morphology of d 28 male broilers
- **Kacey O'Donnell***, Wei Zhai Effects of Eimeria challenges and dietary additives on mortality and growth performance of broilers
 - **Note: Kacey received an Award of Excellence for scientific content and quality of presentation for her oral presentation**
- **Claudia Castaneda***, Dana Dittoe, Kelley Wamsley, Christopher McDaniel, Alfred Blanch, Dorthe Sandvang, Aaron Kiess Discovering the optimal concentration of Gallipro Hatch® that enhances broiler hatchability and live performance
- **Dana Dittoe***, Claudia Castaneda, Kelley Wamsley, Chris McDaniel, Alfred Blanch, Dorthe Sandvang, Aaron Kiess Changes to the gastrointestinal tract and yolk sac of broilers previously in ovo injected with different concentrations of Gallipro Hatch®
- **Faculty Presentations at IPSF, Atlanta, GA, Jan 29**
 - **Katie Elliott**, Scott Branton, Jeffrey Evans, Spencer Leigh, Elizabeth Kim, Hammed Olanrewaju, Gregory Pharr, Sharon Heins-Miller, Donald McIntyre, Hillary Pavlidis, **Edgar Peebles*** Production and humoral immune effects of dietary Original XPC in layer pullets challenged with Mycoplasma gallisepticum
 - **E. Peebles***, Hammed Olanrewaju, Scott Branton, Jeffrey Evans, Spencer Leigh, Elizabeth Kim, Gregory Pharr, **Katie Elliott** Blood variables of commercial egg-laying pullets following a field-strain Mycoplasma gallisepticum challenge
- **MN dos Santos, R Ramachandran, AS Kiess, KGS Wamsley, CD McDaniel, 2018.** Impact of in vitro inoculation and dietary supplementation with Bacillus subtilis on sperm quality of aged White Leghorn roosters, J. of Appl. Poult. Res. <https://doi.org/10.3382/japr/pfx072>
- **Reshma Ramachandran and CD McDaniel**, Parthogenesis in birds: A review. Reproduction, The Journal of the Society for Reproduction and Fertility. Advance Publication. 19 March 2018. <http://dx.doi.org/10.1530/REP-17-0728>; <http://www.reproduction-online.org/content/early/2018/03/19/REP-17-0728.full.pdf+html>
- **Tom Tabler, Jessica Wells** and Nikki Jefcoat, "Infectious Bursal Disease (Gumboro) in Backyard Chickens," Publication 3211 (POD-04-18) http://extension.msstate.edu/sites/default/files/publications/publications/P3211_wells.pdf
- **Tom Tabler**, Jonathan R. Moyle, F. Dustan Clark, Yi Liang, and **Jessica Wells**, "Setback Distances for Poultry Houses," Publication 3209 (POD-03-18). http://extension.msstate.edu/sites/default/files/publications/publications/P3209_wells.pdf
- **Tom Tabler**, "Practice Makes Perfect – Backyard biosecurity critical to flock health," <http://www.chickenwhisperermagazine.com/articles/practice-makes-perfect-backyard-biosecurity-critical-flock-health>. April 2, 2018
- **Tom Tabler**, "Proper water pressure, volume essential to good flock performance," <http://www.thepoultrysite.com/articles/3787/proper-water-pressure-volume>

[essential-to-good-flock-performance/](#). April 3, 2018.

- **R. Ramachandran**, M. Nascimento dos Santos, H.M. Parker, and **C.D. McDaniel**, Parental sex effect of parthenogenesis on progeny production and performance of Chinese Painted Quail (*Coturnix chinensis*); *Theriogenology*, Volume 118, 15 September 2018, Pages 96-102; <https://www.sciencedirect.com/science/article/pii/S0093691X18302474>
- **R. Ramachandran**, M. Nascimento dos Santos, H.M. Parker, and **C.D. McDaniel**, Roles of the sire and dam quail in egg, yolk, albumen, and shell weight alterations due to the parthenogenetic trait. *Theriogenology*, Volume 118, 15 September 2018, Pages 103–109; <https://www.sciencedirect.com/science/article/pii/S0093691X18302462>
- News release featuring **Dr. Tabler** written by Bonnie Coblentz, MSU-ES, on keeping backyard chickens safe: <http://extension.msstate.edu/news/feature-story/2018/use-precautions-keep-backyard-chickens-safe>
- **Tom Tabler**, “Proper water pressure, volume essential to good flock performance,” https://poultryhealthtoday.com/proper-water-pressure-volume-essential-to-good-flock-performance/?utm_source=Poultry+Health+Today+Newsletter&utm_campaign=f38c6acf08-News_you_might_have_missed_PHT_12_19_2017_COPY_01&utm_medium=email&utm_term=0_5ac605299a-f38c6acf08-315442097
- **Xi Wang Aaron S Kiess E David Peebles Kelley G S Wamsley Wei Zhai**, , 2018. Effects of *Bacillus subtilis* and zinc on the growth performance, internal organ development, and intestinal morphology of male broilers with or without subclinical coccidia challenge. *Poultry Sci.*, <https://academic.oup.com/ps/advance-article-abstract/doi/10.3382/ps/pey262/5045361?redirectedFrom=fulltext>

Abstracts Presented at the Poultry Science Association Annual Meeting can be found at: <https://www.poultryscience.org/psa18/docs/2018-PSA-Abstracts.pdf>

Oral Presentations, Undergraduate:

- **(#31): M. Fulton, A. Brown, C. McDaniel and P. Adhikari**, “Effect of house type and strain on hen-day egg production, egg quality and tibial bone breaking strength in commercial egg-laying hens in the late phase of production.”
- **(#162): J. Sousa, C. Castaneda, O Gutierrez, C. McDaniel and A. Kiess**, “In vitro evaluation of six commercially available *Bacillus* based probiotic supplements and their effects on an antibiotic resistant strain of *Clostridium bifermentens*.”

Oral Presentations, Graduate/Faculty:

- **(#24): S. Fatemi, KEC Elliott, W. Zhai, A. Bello, B. Turner, and ED Peebles**, “Effects of the in ovo injection of vitamin D3 and 25-hydroxyvitamin D3 on meat yield and woody breast incidence in broilers fed commercial or calcium and phosphorus-restricted diets.”
- **(#33): A. Alqtani, T. Tabler, K. Wamsley, P. Adhikari, C. McDaniel and A. Kiess**, “Evaluating alternative litter amendments in an attempt to improve broiler litter quality.”
- **(#112): M. Lemons, C. McDaniel, J. Moritz, and K. Wamsley**, “Determining the effects of feeding two broiler strains varied crumble size and intact pellets (d 0-18) on starter and overall (d 0-62) performance”
 - **Note: This presentation received a Graduate Student Award of Excellence for scientific merit and quality of presentation**
- **(#126): B. Zhang, X. Wang, and Wei Zhai**, “Effects of amino acid reduction on growth performance of 6 strains of broilers.”

- **(#153): T. Obe, R. Nannapaneni, W. Schilling, C. McDaniel, and A. Kiess,** “The persistence of Salmonella after completion of sanitization procedures of a poultry processing plant.”
- **(#324): Wei Zhai, K. O'Donnell and K. Herrick,** “Using yeast from ethanol production as a protein source in broiler diets on growth and meat yields.”
Presented by B. Zhang

Poster Presentations, Undergraduate:

- **(#399P): M. Fulton, C. Domenech, T. Dinh, A. Kiess, and P. Adhikari,** “Effect of a pronutrient (Alquernat Nebsui L) on feed consumption, egg production, egg quality and total carotenoids in laying hens supplemented via drinking water.”
- **(#409P): EH Lovelace, B. Zhang and Wei Zhai,** “Effects of dietary amino acid reduction on the meat yield of six strains of broilers.” **Presented by B. Zhang**
- **(#496P): A. Ruzicka, M. Lemons, C. Ennis, C. McDaniel, J. Moritz, and K. Wamsley,** “Determining the effects of feeding two broiler strains varied crumble size and intact pellets (d0-18) on gastrointestinal measurements.”

Poster Presentation, Graduate:

- **(#477P): M Lemons, C. McDaniel, J. Moritz, and K. Wamsley,** “Determining the effects of feeding two broiler strains varied crumble size and intact pellets (d0-18) on d63 processing characteristics.”
- **(#479P): R. Hirai, L. Mejia, C. Coto, J. Caldas, C. McDaniel and K. Wamsley,** “The impact of varying starter digestible lysine and energy levels on male Cobb MV x Cobb 500 broiler 42 day growth performance and processing parameters.”
- **(#510P): A. Brown, M. Lemons, K. Perryman, A. Kiess, and K. Wamsley,** “Interactive effects of probiotics and copper inclusion on 42 d male broiler performance.”
- Mohit Bansal, Ramakrishna Nannapaneni, Chander Shekhar Sharma and **Aaron Kiess,** “Listeria monocytogenes response to sublethal chlorine induced oxidative stress on homologous and heterologous stress adaptation,” *Frontiers in Microbiology*, doi: 10.3389/fmicb.2018.02050.
<https://www.frontiersin.org/articles/10.3389/fmicb.2018.02050/abstract>
- Triplett, M. D., **W. Zhai, E. D. Peebles, C. D. McDaniel, and A. S. Kiess,** 2018. Investigating commercial *in ovo* technology as a strategy for introducing probiotic bacteria to broiler embryos. *Poult. Sci.* 97:658-666. <https://doi.org/10.3382/ps/pex317>
- Wilson, F. D., T. S. Cummings, T. M. Barbosa, C. J. Williams, P. D. Gerard, and **E. D. Peebles,** 2018. Comparison of two methods for determination of intestinal villus to crypt ratios and documentation of early age-associated ratio changes in broiler chickens. *Poult. Sci.* 97:1757-1761. <https://doi.org/10.3382/ps/pex349>
- Sokale, A. O., C. J. Williams, T. S. Cummings, P. D. Gerard, A. Bello, and **E. D. Peebles,** 2018. Effects of *in ovo* injection of different doses of coccidiosis vaccine and turn-out times on broiler performance. *Poult. Sci.* 97:1891-1898.
<https://doi.org/10.3382/ps/pey028>
- Zhang, H., **K. E. C. Elliott, O. A. Durojaye, S. A. Fatemi, and E. D. Peebles,** 2018. Effects of *in ovo* administration of L-ascorbic acid on broiler hatchability and its influence on the effects of pre-placement holding time on broiler quality characteristics. *Poult. Sci.* 97:1941-1947. <https://doi.org/10.3382/ps/pey040>
- Gurung, Shailesh, Dima White, Gregory Archer, Dan Zhao, Yuhua Farnell, J. Allen Byrd, **E. David Peebles,** and Morgan B. Farnell, 2018. Evaluation of alternative euthanasia methods of neonatal chickens. *Animals* 8, 37. <https://doi.org/10.3390/ani8030037>

- **¹Peebles, E. D.**, 2018. *In ovo* applications in poultry: A review. Invited review article. Poult. Sci. 97:2322-2338. <https://doi.org/10.3382/ps/pey081>
- Nasir, Z., and **E. D. Peebles**, 2018. Symposium: avian embryo nutrition and incubation. Poult. Sci. <http://dx.doi.org/10.3382/ps/pey137>
- Wang, X., **A. S. Kiess, E. D. Peebles, K. G. S. Wamsley, and W. Zhai**, 2018. Effects of *Bacillus subtilis* and zinc on the growth performance, internal organ development, and intestinal morphology of male broilers with or without a subclinical coccidia-challenge. Poult. Sci. <http://dx.doi.org/10.3383/ps/pey262>.
- **Elliott, K. E. C.**, S. L. Branton, J. D. Evans, and **E. D. Peebles**, 2018. Early post-hatch survival and humoral immune response of layer chickens when *in ovo*-vaccinated with strain F *Mycoplasma gallisepticum*. Poult. Sci. <http://dx.doi.org/10.3383/ps/pey282>.
- **Zhang, L.**, Zhu, JH, Zhang, X., Cheng, WH, 2018. The thioredoxin-like family of selenoproteins: Implications in aging and age-related degeneration. Biological Trace Element Res. <http://dx.doi.org/10.1007/s12011-018-1521-9>
- **Adhikari, P.**, CH Lee, DE Cosby, NA Cox, WK Kim, 2018. Effect of probiotics on fecal excretion, colonization in internal organs and immune gene expression in the ileum of laying hens challenged with Salmonella Enteritidis. Poultry Sci. <https://doi.org/10.3382/ps/pey443>
- **Adhikari, Pratima**, Douglas E. Cosby, Nelson A Cox, Monique S Franca, Susan M Williams, Robert Gogal, Jr., Casey W Ritz, Woo K Kim, 2018. Effect of dietary fructooligosaccharide supplementation on internal organs Salmonella colonization, immune response, ileal morphology, and ileal immunohistochemistry in laying hens challenged with Salmonella enteritidis. Poultry Sci. 97:7:2525-2533. <https://doi.org/10.3382/ps/pey101>
- **Tom Tabler, Jessica Wells** and **Sue Ann Hubbard** (Revised 2018); “Successfully handling hatching eggs,” http://extension.msstate.edu/sites/default/files/publications/information-sheets/IS1638_web.pdf
- **Tom Tabler**, “Footpad dermatitis a greater concern in chickens grown to older ages,” https://poultryhealthtoday.com/footpad-dermatitis-a-greater-concern-in-chickens-grown-to-older-ages/?utm_source=Poultry+Health+Today+Newsletter&utm_campaign=ce36d7a08c-News_you_might_have_missed_PHT_12_19_2017_COPY_01&utm_medium=email&utm_term=0_5ac605299a-ce36d7a08c-315441937
- **Yi Liang**, Assistant Professor, Extension Engineer; Susan E. Watkins Professor, Extension Poultry Specialist; **G. Thomas Tabler**, Former Project Manager, Poultry Science; David McCreery Project/Farm Manager, Poultry Science. University of Arkansas System Division of Agriculture, “Sprinklers Cool Birds and Conserve Water,” featured on Engormix website: https://en.engormix.com/poultry-industry/articles/sprinklers-cool-birds-conserve-t42289.htm?utm_source=notification&utm_medium=email&utm_campaign=2-1-0
- **Tom Tabler**, F. Dustan Clark, Jonathan R. Moyle, **Jessica Wells**, and Nikki Jefcoat, “Newcastle Disease in Backyard Chickens,” <http://extension.msstate.edu/sites/default/files/publications/publications/p3289.pdf>