



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. Wamsley and Beck** visited with Tyson representatives in Forest, MS, to discuss research and teaching needs, Dec. 4.
- **Dr. Beck** attended the December MPA Grower Advisory Committee Meeting in Jackson, Dec. 5
- **Drs. Beck and Tabler** participated in the MPA Board of Directors Meeting in Pearl, Dec. 6.
- **Dr. Beck** visited with Wayne Farms personnel to discuss research and teaching needs, Dec. 11.
- **Dr. Tabler** presented a talk at the MSU Ag Econ Agricultural Financial Professionals Workshop entitled, "Poultry Economic Outlook," Dec 12.
- **Mrs. Wells** and poultry faculty hosted a Senior Social for our graduating students, Dec. 14.
- **Drs. Beck and Wamsley** attended Commencement, Dec. 14

Congratulations to...our August and December Graduates:

- **BS**
 - **Cameron Schultz, Taylor Penny, Levi Sasser, Miranda Taylor, Dylan Stephen, Colton Hargett, Conner Mitchell**
- **MS**
 - **Kacey O'Donnell**, supervised by **Dr. Zhai**
- **PhD**
 - **Dr. Reshma Ramachandran**, supervised by **Dr. McDaniel**
 - **Dr. Mark Lemons**, supervised by **Dr. Wamsley**

Recent Publications:

- Yi Liang, **Thomas Tabler**, F. Dustan Clark, Michael T. Kidd, "Getting Broiler Houses Ready for Summer," <https://www.uaex.edu/publications/pdf/FSA-8021.pdf>
- Yi Liang, **Thomas Tabler**, F. Dustan Clark, Michael T. Kidd, "Managing Summer Ventilation Systems in Broiler Houses," <https://www.uaex.edu/publications/pdf/FSA-8021.pdf>
- **Feature Story:** Poultry sees demand for eggs, larger production, Susan Collins-Smith, MSU Extension: <http://extension.msstate.edu/news/feature-story/2018/poultry-sees-high-demand-for-eggs-larger-production>

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, Hamed 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***, Hamed 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_web.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_web.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>
- ¹**Peebles, 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>
- 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-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
- **Tom Tabler**, Margaret L. Khaitsa, and **Jessica Wells**, 2018. "Village Chicken Production in Rural Africa," <http://extension.msstate.edu/sites/default/files/publications/publications/p3292.pdf>
- **Tom Tabler**, Kelly M. Loftin, and **Jessica Wells**, 2018. "Combatting Bed Bugs in Broiler Breeder Houses," <http://extension.msstate.edu/sites/default/files/publications/publications/p3293.pdf>