



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, Sukumaran, and Zhang** attended the Delmarva Poultry Health and Processing Meeting, Ocean City, MD, October 8-11.
- **Mrs. Wells** participated in the CALS Fall Preview Day for undeclared incoming students, October 8.
- **Dr. Tabler** presented a talk, "Biosecurity against Avian Influenza," at the Perry County Poultry meeting, Runnelstown, MS, October 11.
- **Mrs. Christensen, Dr. Tabler, and Dr. Wamsley**, assisted by undergrads **Victoria Williams, Ashley Ruzicka, Kynan Heath, and Kaylee Cummings**, conducted the State Fair Poultry 4-H Chain Show, Jackson, MS, October 12.
- **Mrs. Wells** participated in the CALS Scholars Recognition Day for high-ACT incoming students, October 15.
- **Drs. Tabler and Sadler** visited a Peco farm at Sebastopol to do pullet checks and necropsies, October 18.
- **Drs. Beck, Sukumaran, Kiess, and Tabler and Mr. Moon** participated in the quarterly **Industry Processing Advisory Committee** meeting in Starkville and on campus to discuss continued upgrades to the MSU poultry processing plant, October 18-19.

Recent Publications:

- **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

- Homecoming Tailgate Sponsored by BankPlus -

In front of Newell Grissom

Nov. 3, 2018

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 IPSE, 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_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 Coblenz, 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>