



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.

- **PO Faculty and Staff** continue meeting weekly via Zoom to discuss ongoing departmental strategies and events.
- **Dr. Tabler** visited a Sanderson Farms grower in Tylertown, Dec. 4.
- **Dr. Beck** participated in a virtual meeting of the MSU Academic Department Heads Executive Council, Dec. 4.
- **Dr. Beck** served on a panel to discuss promotion and tenure best practices for new faculty in the college, Dec. 7.

Graduate Seminar - Thesis/Dissertation Prospectus Presentations:

- December 4: **Ishab Poudel (Dr. Adhikari), Sabin Poudel (Dr. Zhang), Dalton Dennehy (Dr. Wamsley)**
- December 11: **Marissa Powell (Dr. Wells), Peyton Taylor (Dr. Wells), Lauren Lindsey (Dr. Peebles)**

Congratulations to...

- **Andrew Brown**, PhD grad student with **Dr. Wamsley**, on the successful completion of his doctoral preliminary exams and advancement to candidacy, Dec. 1

Recent Publications and Media...

- **Li, T., C. D. Castañeda, J. Miotto, C. McDaniel, A. S. Kiess, and L. Zhang.** 2020. Effects of *in ovo* probiotic administration on the incidence of avian pathogenic *Escherichia coli* in broilers and an evaluation on their virulence and antimicrobial resistance properties. *Poult. Sci.* doi <https://doi.org/10.1016/j.psj.2020.11.072>
- **Li, T., C. D. Castañeda, M. A. Arick, C.-Y. Hsu, A. S. Kiess, and L. Zhang.** 2020. Complete genome sequence of multidrug-resistant avian pathogenic *Escherichia coli* strain APEC-O2-MS1170. *Journal of Global Antimicrobial Resistance* 23:401-403. doi <https://doi.org/10.1016/j.jgar.2020.11.009>
- **Interesting articles on Dec. 18:**
 - "Ag industry posted 2020 estimated value of \$7.35B," Bonnie Coblentz, SDN; <https://starkvilledailynews.pressreader.com/starkville-daily-news/20201218/textview>
 - "Poultry demand strong, egg value skyrockets," Susan Collins-Smith, MSU-Ext. <http://extension.msstate.edu/news/feature-story/2020/poultry-demand-strong-egg-value-skyrockets>

Cumulative List of Scientific and Extension Publications, 2020

- **Abstracts of Presentations at the IPSF, Atlanta, January 27-28, 2020; these can be accessed at www.ippexpo.org/ispf:**
- **MSSTATE Poultry Science Presentations** were as follows; actual journal citations will be available later in the spring:
 - **Tomi Obe**, Rmam Nannapaneni, Wes Schilling, **Li Zhang**, **Aaron Kiess**, “Mode of persistence and antibiotic resistance of Salmonella isolates from poultry processing equipment.”
 - **Ishab Poudel**, **Christopher McDaniel**, M. Schilling, **Pratima Adhikari**, “Effects of split feeding limestone particle size ratios on egg production, egg quality, and eggshell strength of White Leghorn W-36 hens in the late production phase.”
 - **Bo Zhang**, **Sabin Poudel**, **Linan Jia**, **Wei Zhai**, “Effects of dietary amino acid and metabolizable energy reduction on growth performance and economic return of Ross 708 broilers.”
 - **Andrew Brown**, Jason Lee, **Kelley Wamsley**, “Determining the digestible isoleucine requirement of Ross x Ross 708 male broilers from 0 to 18 days of age.”
 - **Linan Jia**, **Sabin Poudel**, **Wei Zhai**, “Eimeria challenge and feed additives affected broiler woody breast incidence.”
 - **Courtney Ennis**, Curran Gehring, Mike Bedford, Craig Wyatt, **Kelley Wamsley**, “Response of Ross x Ross 708 male broilers fed varying phytase enzyme and activity during d 0-14.”
 - **Saman Fatemi**, **Katie Elliott**, **Abdulmohsen Alqhtani**, **Ayoub Amousstaaid**, **Abiodun Bello**, **April Levy**, **David Peebles**, “Improvement in the performance and inflammatory responses of Ross 708 broilers when injected in ovo with various forms of vitamin D₃.”
 - **NOTE: This presentation received a Certificate of Excellence for scientific merit and quality of presentation.**
 - **Tianmin Li**, **Sadie White**, **Nikhil Nuthalapati**, **Anura Sukumaran**, **Aaron Kiess**, **Li Zhang**, “The prevalence and antimicrobial resistance properties of Campylobacter in Mississippi poultry.”
 - **Sadie White**, **Tianmin Li**, **Sabin Poudel**, **Aaron Kiess**, **Li Zhang**, “Comparison of four bacterial DNA extraction methods in poultry litter and fecal sample.”
 - **NOTE: This presentation received an Undergraduate Certificate of Participation.**
 - **Courtney Fancher**, **Hudson Thames**, **Alyssa Easterling**, **Alexis Dillender**, **Nikhil Nuthalapati**, **Li Zhang**, **Aaron Kiess**, **Thu Dinh**, **Anuraj Sukumaran**, “Influence of season and age of flock on the virulence gene profiles of Escherichia coli isolates from ‘no antibiotics ever’ commercial broiler farms and their antibiotic susceptibility.
 - **Milan Sharma**, **Dima White**, **Woo Kim**, **Pratima Adhikari**, “Effects of housing environment and laying hen strain on tibia and femur bone properties.”
 - **NOTE: This presentation received a Certificate of Excellence for scientific merit and quality of presentation.**
 - **Milan Sharma**, **Li Zhang**, **Aaron Kiess**, **Pratima Adhikari**, “Housing environment and laying hen strain impacts on cloacal microbiology and incidence of avian pathogenic Escherichia coli (APEC) in the late phase of production.”

- **Courtney Ennis**, Curran Gehring, Mike Bedford, Craig Wyatt, **Kelley Wamsley**, “Effects of varying phytase enzyme and total activity on phytate degradation and nutrient digestibility of young male Ross x Ross 708 broilers.”
- **Abdulmohsen Alqhtani, Saman Fatemi, Katie Elliott, Ayoub Mousstaid**, Abiodun Bello, Apri Levy, **David Peebles**, “Increased breast meat yield of Ross 709 broilers in response to the in ovo injection of various forms of vitamin D₃.”
- **Sabin Poudel, Wei Zhai**, “Effects of riboflavin and Bacillus subtilis on blood components of male broiler with or without coccidial challenge.”
- **Carley Rhoads, Courtney Ennis, Andrew Brown, Pratima Adhikari, Tom Tabler**, A. Elzind, **Kelley Wamsley**, “Assessment of novel water treatment equipment (H₂Oelite) on broiler performance, tibia ash and mineral digestibility.”
 - **NOTE: This presentation received an Undergraduate Certificate of Participation.**
- **Jonathan Moon**, Jan DuBien, **Andrew Brown**, Yi Liang, **Tom Tabler**, “Water conservation and production benefits of sprinkling broilers.”
- **Tom Tabler**, Jonathan R. Moyle, Shawna Weimer, **Jonathan Moon**, and **Jessica Wells**, “Poultry Farm Insurers Expect Proper Earth Grounding,”
http://extension.msstate.edu/sites/default/files/publications/publications/P3427_web.pdf
- **Tom Tabler**, “Sprinklers Cooling Benefits in Poultry Houses,”
https://en.engormix.com/MA-poultry-industry/videos/sprinklers-cooling-benefits-poultry-houses-t58106.htm?utm_source=notification&utm_medium=email&utm_campaign=2-1-0&smId=dc221e1c14965e8739bf705a7104cfc5&src_ga=1
- **Tom Tabler**, “Gangrenous Dermatitis in Broilers,” https://en.engormix.com/MA-poultry-industry/videos/gangrenous-dermatitis-broilers-t58317.htm?utm_source=notification&utm_medium=email&utm_campaign=2-1-0&smId=60481b605de89fd22c3d267a97b6d174&src_ga=1
- **Tom Tabler**, “Rotary Drum Composting of Poultry Mortalities,”
https://en.engormix.com/MA-poultry-industry/videos/rotary-drum-composting-poultry-mortalities-t58318.htm?utm_source=notification&utm_medium=email&utm_campaign=2-1-0&smId=609cb340ff134465ff7d309e5b1ee7cf&src_ga=1
- **Tom Tabler**, Yi Liang, **Jonathan Moon**, and **Jessica Wells**, “NAE Production Challenges Poultry Industry on Several Fronts,”
http://extension.msstate.edu/sites/default/files/publications/publications/P3428_web.pdf
- **Tom Tabler**, Helping growers navigate the NAE maze;
<https://www.dpichicken.org/media/docs/TIMELY-TOPICS-March-2020.pdf>
- **Drs. Wells and Tabler**, Mississippi State Chicken Chat;
https://www.youtube.com/channel/UChdrpk7h2meKontdypmRniQ?view_as=subscriber
- **Tom Tabler**, Yi Liang, Jonathan R. Moyle, Shawna L. Weimer, **Jonathan Moon**, and **Jessica Wells**, “Characteristics of Successful Poultry Growers,”
http://extension.msstate.edu/sites/default/files/publications/publications/P3446_web.pdf
- Jonathan Moyle, Maegan Perdue, **Dr. Tom Tabler**, Dr. Shawna Weimer, Jennifer Rhodes, “Hatching Eggs at Home,” <https://extension.umd.edu/learn/publications/hatching-eggs-home>

- **Tom Tabler**, Jonathan R. Moyle, Shawna L. Weimer, **Jonathan Moon**, and **Jessica Wells**, “Backyard Chickens and COVID-19,” http://extension.msstate.edu/sites/default/files/publications/publications/P3447_web.pdf
- **News Release on Easter Tornadoes from MSU Extension**, <https://www.wattagnet.com/articles/40055-tornadoes-hit-least-90-mississippi-poultry-houses>
- **Tom Tabler**, Natalie Armour, **Jonathan Moon**, and **Jessica Wells**, “Infectious Bronchitis in Commercial Chickens,” http://extension.msstate.edu/sites/default/files/publications/publications/P3449_web.pdf
- Abdelhamed H, **Ramachandran R**, Narayanan L, Ozdemir O, Cooper A, Olivier AK, Karsi A, Lawrence ML. “[Contributions of a LysR transcriptional regulator to Listeria monocytogenes virulence and identification of its regulons](#)” 2020 Apr 27;202(10). DOI: 10.1128/JB.00087-20 .
- **Drs. Wells and Tabler** posted a YouTube video, “What to consider before purchasing a backyard flock,” May 6 : https://www.youtube.com/channel/UCHdrpk7h2meKontdypmRniQ?view_as=subscriber
- **Tom Tabler**, “Prepare now for summer heat, humidity,” https://poultryhealthtoday.com/prepare-now-for-summer-heat-humidity/?utm_source=Poultry+Health+Today+Newsletter&utm_campaign=fe6116322d-AAAP_antimicrobial_stewardship_PHT_1_8_2018_COPY_0&utm_medium=email&utm_term=0_5ac605299a-fe6116322d-315441937
- **Tom Tabler**, “Cooling chickens with sprinklers has multiple benefits,” <https://poultryhealthtoday.com/cooling-chickens-with-sprinklers-has-multiple-benefits/>
- **Tom Tabler**, “Proper water pressure, volume essential to good flock performance,” <https://poultryhealthtoday.com/proper-water-pressure-volume-essential-to-good-flock-performance/>
- **Hudson T. Thames** and **Anuraj T. Sukumaran**, “A review of Salmonella and Campylobacter in broiler meat: Emerging challenges and food safety measures,” *Foods*: 9, 776; <https://doi.org/10.3390/foods9060776>
- Sharma, M. K., T. Dinh and **P. Adhikari**. 2020. Production performance, egg quality and small intestine histomorphology of the laying hens supplemented with phytogenic feed additive. *J. Appl. Poult. Res.* 29: 362-371. <https://doi.org/10.1016/j.japr.2019.12.001>
- **Adhikari, P.**, A. Kiess, R. Adhikari and R. Jha. 2020. An approach to alternative strategies to control avian coccidiosis and necrotic enteritis. *J. Appl. Poult. Res.* 29: 515-534. <https://doi.org/10.1016/j.japr.2019.11.005>
- Adhikari, B., S. R. Jun, Y. M. Kwon, A. S. Kiess and **P. Adhikari**. 2020. Effects of housing types on cecal microbiota of two different strains of laying hens during the late production phase. *Front. Vet. Sci.* 7:331. <https://doi.org/10.3389/fvets.2020.00331>
- **Tom Tabler**, Yi Liang, Jonathan R. Moyle, Shawna L. Weiner, **Jonathan Moon**, and **Jessica Wells**, Characteristics of successful contract poultry growers, https://www.poultrytimes.com/eedition/page_7b3ce268-ddab-540f-8698-b2bf9157fa77.html
- **Tom Tabler**, Intestinal health in the era of NAE, <https://www.poultryproducer.com/commentaries/intestinal-health-in-the-era-of-nae-by-tom-tabler-phd-extension-professor-mississippi-state-university-extension-service-poultry-science-department/>

- **Tom Tabler**, Margaret L. Khaitsa, Said H. Mbaga, John N. Jeckoniah, **Jonathan Moon**, and **Jessica Wells**, Poultry Extension Personnel Needed across East Africa, http://extension.msstate.edu/sites/default/files/publications/publications/P3494_web.pdf
- **Tom Tabler**, Margaret L. Khaitsa, Said H. Mbaga, John N. Jeckoniah, **Jonathan Moon**, and **Jessica Wells**, “Improved Biosecurity and Extension Programming can Benefit African Chicken Production,” http://extension.msstate.edu/sites/default/files/publications/publications/P3505_web.pdf
- **Tom Tabler**, Margaret L. Khaitsa, Said H. Mbaga, John N. Jeckoniah, **Jonathan Moon**, and **Jessica Wells**, “Gender Issues in Ag Extension Programming in sub-Saharan Africa,” http://extension.msstate.edu/sites/default/files/publications/publications/P3501_web.pdf
- **Tom Tabler**, Gangrenous Dermatitis in Broilers, https://en.engormix.com/MA-poultry-industry/videos/gangrenous-dermatitis-broilers-t58317.htm?utm_source=notification&utm_medium=email&utm_campaign=2-1-0&smlid=b43108a0b1be17d89c5b97f7836d81bd&src_ga=1
- **Tom Tabler**, Brigid Elchos, **Jonathan Moon**, and **Jessica Wells**, “Commercial Chickens and COVID-19: Recommendations for Depopulating Poultry Flocks,” http://extension.msstate.edu/sites/default/files/publications/publications/P3458_web.pdf
- **Tom Tabler**, “Poultry biosecurity has lessons for coping with COVID-19,” https://poultryhealthtoday.com/poultry-biosecurity-has-lessons-for-coping-with-covid-19/?utm_source=Poultry+Health+Today+Newsletter&utm_campaign=c26e26ed15-AAAP_antimicrobial_stewardship_PHT_1_8_2018_COPY_0&utm_medium=email&utm_term=0_5ac605299a-c26e26ed15-315442097
- Jon Moyle, Maegan Perdue, **Tom Tabler**, Paul Goeringer, Identifying and Preventing Poultry Predators in the Mid-Atlantic Region, https://extension.umd.edu/sites/extension.umd.edu/files/_images/programs/poultry/Poultry%20and%20Predators.pdf
- **Abstracts presented at the 2020 Virtual PSA Annual Meeting (link to abstracts will be provided as soon as these are published in Poultry Science)**
 - **W. Zhai**, “How to be a better reviewer: Section Editor perspective,” invited presentation in Student Workshop Symposium
 - **Reshma Ramachandran**, Chuan-Yu Hsu, **Li Zhang**, “Development of probe-based multiplex real-time PCR assays for the rapid detection of avian pathogenic *Escherichia coli*,”
 - **Jessica B. Wells**, “Recruitment Strategies for the Next Generation of Poultry Workers,” invited presentation in Recruitment and Engagement of Future Poultry Workforce Symposium
 - **Linan Jia**, “Effects of antibiotic and probiotic feed additives on growth performance of Eimeria infected broilers”
 - **Ishab Poudel, Nikhil Nuthalapati, Anuraj Sukumaran, Li Zhang, Mary Beck, Aaron Kiess, Pratima Adhikari**, “Prevalence of avian pathogenic *Escherichia coli* in cage-free W-36 pullets reared under monochromatic blue and normal LED lights”
 - **Katie Elliott, Ethan DeHart, Saman Fatemi, Abdul Mohssen Alqhtani, Ayoub Mousstaaid, Kayla Bannister, Wei Zhai, David Peebles**, “Effects of reduced incubation temperature starting as 12 days of incubation on post-hatch broiler performance”
 - **Sabin Poudel, Wei Zhai**, “Effects of *Bacillus subtilis* on intestinal morphological structure of male broilers with or without coccidial challenge”

- **Saman Fatemi, Katie E. Elliott, Abdul Mohssen Alqhtani, Ayoub Mousstaaid, Li Zhang, E. David Peebles**, “Effects of the in ovo injection of vitamin D₃ and 25-hydroxyvitamin D₃ on the vitamin D₃ activity-related gene expression of broilers challenged with coccidiosis”
- **Saman Fatemi, Katie E. Elliott, Abdul Mohssen Alqhtani, Ayoub Mousstaaid, Li Zhang, E. David Peebles**, “Effects of the in ovo injection of vitamin D₃ and 25-hydroxyvitamin D₃ on the immune-related gene expression of broilers challenged with coccidiosis”
- **Ayoub Mousstaaid, Saman Fatemi, Katie E. Elliott, Abdul Mohssen Alqhtani, David Peebles**, “Effects of the in ovo injection of L-ascorbic acid (AA) on the serum AA concentrations and hatchability of broiler embryos”
- **Tianmin Li Claudia Castañeda, Mark A. Arick II, Chuan-Yu Hsu, Li Zhang**, “Whole-genome sequence analysis of multidrug-resistant avian pathogenic Escherichia coli (APEC) MS1170 isolated from broiler”
- **Chicken Chat – YouTube Videos:**
 - **Welcome to Chicken Chat:**
https://www.youtube.com/watch?v=3fHAMr9AVnY&feature=share&fbclid=IwAR1rdjMoKlQyCnqaOMbsQ3LHODGaU8o6rlEt0HEB_vHEUDJnRPfvjQ-UTwM
 - **Gnat Remedies in Poultry:** <https://youtu.be/9oVERxHHJDK>
 - **What to Consider before Purchasing a Backyard Flock:**
<https://www.youtube.com/watch?v=uveU1G0Atko&feature=share&fbclid=IwAR3wUcBafjBwVGdStrFicWwTFVxdkAzdlytvdrYZQbSODmj1KF0Nwtb5xyg>
 - **What to Consider when Choosing Your Chicken Breed:**
<https://youtu.be/w5PIEUdEzqw>
 - **Poultry Biosecurity:** <https://youtu.be/NB4iez60xGI>
 - **Tom Tabler**, “Manual helps poultry producers with hurricane prep, recovery,” <http://extension.msstate.edu/news/feature-story/2020/manual-helps-poultry-producers-hurricane-prep-recovery>
 - **Tom Tabler, Jonathan Moon, and Jessica Wells**, “Issues with Poultry House LED Lamps and Light Dimmers,”
http://extension.msstate.edu/sites/default/files/publications/publications/P3510_web.pdf
 - **Tom Tabler**, “Intestinal health in the era of NAE,”
<https://avicultura.info/en/intestinal-health-in-the-era-of-nae/>
 - **Dr. Tom Tabler and Jonathan Moon**, “Preparing for Baby Chicks in a Commercial House,”
<https://www.youtube.com/watch?v=ZFU5D8rwWNk&feature=youtu.be&fbclid=IwAR1-S456gicVrpg6O2vV7HPHNyxKHqtv-k2OUEEqZrrl7sNRuXvXwf4qZs0>
 - **Dr. Tom Tabler and Jonathan Moon**, “Useful Tools to Better Manage Your Flock,” <https://www.youtube.com/watch?v=gPSvUre-qT4&feature=youtu.be&fbclid=IwAR0dxYAXytnhpeY4lCYEpRxdz9119yCAL2sa2OVg7Hyxj5xq0OODX0b0Uh4>
 - **Dr. Tom Tabler and Jonathan Moon**, “Thermal Thermometer Use,”
https://www.youtube.com/watch?v=-smWqW_PeZM&feature=youtu.be&fbclid=IwAR1LOpkvz2pmyeXDSL56b4QETMxFUF2Q6CDPU51smle4utaPzgKe5RfiFEo
 - **Dr. Tom Tabler and Dr. Jessica Wells**, “How to make your poultry farm environmentally friendly using a composter,” July 7;

<https://www.youtube.com/watch?v=Xfy-Uatx5Jc>

- **Dr. Tabler and Mr. Moon**, “Sprinkler Controller System,” <https://www.youtube.com/watch?v=akVFi2si404&feature=youtu.be&fbclid=IwAR39z3rf2iBb7dycnknP0RftFgLISADQeG2KcKFxf08y6yzazgwD6ZdQbKA>
- **Tom Tabler, Yi Liang, Jonathan Moon, Jessica Wells**, “Broiler Litter: Odor and Moisture Concerns,” http://extension.msstate.edu/sites/default/files/publications/publications/P3515_web.pdf
- Yi Liang, **Geroge T. Tabler**, and Sami Dridi, “Sprinkler technology improves broiler production sustainability: From stress alleviation to water usage conservation: A mini review,” *Frontiers in Veterinary Science*, Vol 7, September 2020, http://journal.frontiersin.org/article/10.3389/fvets.2020.544814/full?&utm_source=Email_to_authors&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers_in_Veterinary_Science&id=544814
- **Tom Tabler**, “Tackling stress key to protecting birds from coryza resurgence, says expert,” <https://poultryhealthtoday.com/tackling-stress-key-to-protecting-birds-from-coryza-resurgence-says-expert/>
- Mousa AA, **Ramachandran R**, Ozdemir O, Karsi A, Abdelhamed H. Dietary trans-cinnamaldehyde improves oxidative stress response of channel catfish (*Ictalurus punctatus*) following *Edwardsiella ictaluri* infection. 2020 Sep 28, “In Press.” DOI: <https://doi.org/10.1016/j.aquaculture.2020.735985>.
- **Fancher, CA; Zhang, L; Kiess, AS; Adhikari, PA; Dinh, TT; Sukumaran, AT**, 2020. “Avian Pathogenic *Escherichia coli* and *Clostridium perfringens*: Challenges in No Antibiotics Ever Broiler Production and Potential Solutions,” *Microorganisms* 8:1533. Mousa AA, **Ramachandran R**, Ozdemir O, Karsi A, Abdelhamed H. Dietary trans-cinnamaldehyde improves oxidative stress response of channel catfish (*Ictalurus punctatus*) following *Edwardsiella ictaluri* infection. 2020 Sep 28, “In Press.” DOI: <https://doi.org/10.1016/j.aquaculture.2020.735985>.
- **Tom Tabler**, F. Dustan Clark, **Jessica Wells**, and Morgan Farnell, “Avian Influenza: Things You Should Know,” <https://www.poultryproducer.com/united-states/avian-influenza-things-you-should-know/>
- **News Releases:**
 - “**MSU Poultry Science Department Adds Biosecurity Level 2 Lab**,” <https://www.msstate.edu/newsroom/article/2020/10/msu-poultry-science-department-adds-biosecurity-level-2-lab>
 - WattPoultry.com interview with **Dr. Kiess**, “**BSL2 poultry lab speeds search for antibiotic alternatives**,” <https://www.wattagnet.com/articles/41491-bsl2-poultry-lab-speeds-search-for-antibiotic-alternatives>