

Wilmer J. Pacheco
Department of Poultry Science
260 Lem Morrison Drive, Auburn AL 36849

Education:

Ph.D. December 2014, Nutrition and Physiology, NC. State University, Raleigh, NC.
Dissertation title: Effect of particle size and inclusion level of DDGS, and pellet quality on nutrient digestibility, gastrointestinal development, and live performance of broilers and swine.
Advisors: Drs. Peter Ferket and John Brake

M.Sc. December 2011, Poultry Science, NC. State University, Raleigh, NC.
Thesis title: Evaluation of trypsin inhibitors levels and particle size of expeller-extracted soybean meal on broiler performance.
Advisor: Dr. Charles Stark

B.S. December 2005, Food Science and Technology, Pan-American School of Agriculture, Honduras, CA.

I. Professional Experience:

2021-present Extension Specialist and Associate Professor, Department of Poultry Science, Auburn University, Auburn AL.

Responsibilities include: Develop an Extension program in feed milling that supports the existing feed industry in the state of Alabama and that serves as a catalytic agent to bring new ideas and innovation essential for the future of the feed and animal industry in the state. Provide extension education in feed mill regulations, feed milling operations, ingredient and feed quality, and poultry nutrition. Participate in Departmental recruiting activities such as FFA Poultry Judging and 4-H events. Write and disseminate information on poultry nutrition, feed mill regulations and feed operations. Research has been focused on the interrelationships between feed milling, nutrition, and physiology on poultry performance and includes implementation of feed mill techniques that improve feed efficiency and reduce feed costs; identification of processing alternatives to decrease bacterial load in poultry feed without affecting the nutrient content and composition; use feed additives (prebiotics, essential oils, organic trace minerals) to improve broiler performance; amino acid requirements for broilers, and analysis of thermostability of probiotics and enzymes.

2015-2021 Extension Specialist and Assistant Professor, Dept. of Poultry Science, Auburn University, Auburn AL.

- 2009-2014 Graduate Research Assistant, Dept. of Poultry Science, North Carolina State University, Raleigh NC.
Research included: Novel processing strategies to reduce trypsin inhibitors in expeller-extracted soybean meal (SBM) and increase oil yield. Evaluation of the effect of particle size and trypsin inhibitor levels of expeller-extracted SBM on broiler performance. Evaluate the effects of particle size and dietary inclusion level of DDGS on pellet quality, feed manufacturing efficiency, nutrient digestibility, gastrointestinal development, and performance of broilers and swine.
- 2006-2009 Feed mill supervisor, East Coast Division, Murphy Brown LLC. Responsibilities included: Oversee the production of approximately 10,000 tons of feed per week. Employee training on feed mill operations, quality control of ingredients and finished feeds, safety, and environmental protection.

HONORS AND AWARDS

Faculty: 5

1. Young Scientist Travel Award. 2021. World Poultry Science Association, World Poultry Congress, Paris France.
2. Dean's Grantsmanship Award. 2020. College of Agriculture, Auburn University.
3. The Richard L. Guthrie Award for Achievement in International Agriculture. 2020. College of Agriculture, Auburn University.
4. Alumnus of the Month. 2020. Graduate Student Association, Pan-American School of Agriculture, Zamorano Honduras.
5. Young Scholar Travel Award. 2016. World Poultry Science Association, World Poultry Congress, Beijing China.

As advisor: 17

1. Isaac Vargas Patiño. Alabama Feed and Grain Scholarship (2023-2024).
2. Joseph Gulizia, Alabama Feed and Grain Scholarship (2023-2024).
3. Isaac Vargas Patiño. 2023. Student Research Paper Certificate of Excellence, Poultry Science Association, Philadelphia, PA.
4. José Rodrigo Hernandez. 2023. Student Research Paper Certificate of Excellence, Poultry Science Association, Philadelphia, PA.
5. Joseph Gulizia, Aviagen Fellowship (2022-2023).
6. José Isaac Vargas, Aviagen Fellowship (2022-2023).
7. José Rodrigo Hernandez, Allen Edgar Graduate Student Award, AU Department of Poultry Science (2022-2023).
8. Joseph Gulizia, Alabama Feed and Grain Scholarship (2022-2023).
9. Joseph Gulizia, Allen Edgar Graduate Student Award, AU Department of Poultry Science (2021-2022).
10. Joseph Gulizia, Presidential Graduate Research Fellow, Auburn University (2021-2024)

11. Joseph Gulizia, Youth Program Award. 2021. World Poultry Science Association, World Poultry Congress, Paris France.
12. Fozol Korim Ovi, Youth Program Award. 2021. World Poultry Science Association, World Poultry Congress, Paris France.
13. Susan Bonilla, Certificate of Achievement, 2021. International Poultry Scientific Forum, Atlanta, Georgia.
14. Susan Bonilla, Certificate of Excellence. 2020. Poultry Science Association.
15. Martha Rueda, Novus Award. 2020. College of Agriculture, Auburn University
16. Andrea Rubio, Certificate of Achievement, 2018. International Poultry Scientific Forum, Atlanta, Georgia.
17. Andrea Rubio, Certificate of Excellence, 2018. Annual Meeting of the Poultry Science Association, San Antonio, Texas.
18. Andrea Rubio, Elanco Award. 2018. Poultry Science Seminar, Auburn, Alabama.
19. Andrea Rubio. 2017. Student Research Paper Certificate of Excellence, Poultry Science Association, Orlando, FL.

SERVICE

1. University Service

a. Service to the University

- | | |
|-------------|--|
| 2017 - 2019 | Competitive Research Grant Committee |
| 2016 - 2018 | Review panel – Intramural Grants Program |

b. Service to the College of Agriculture

- | | |
|---------------|--|
| 2023 | Leader of the Agriculture in Greece Study Abroad Program. |
| 2021- present | Chair of the Global Programs Committee, College of Agriculture |
| 2016-present | CoAg Global Programs Advisory Committee |
| 2016-present | Reviewer – York International Scholar Program |
| 2017 | Review panel for Richard L. Guthrie Award for Achievement in International Agriculture |
| 2017 | Review panel – Novus International Research Award |
| 2017 | Judge CoAg Graduate Poster Showcase |

c. Service to the Department of Poultry Science

- | | |
|--------------|---|
| 2023 | Member of the search committee for the interim Department Head in Poultry Science |
| 2023 | Member of the search committee for the interim Department Head in Poultry Science |
| 2022 | Chair of the search committee for Poultry Nutrition |
| 2022-present | Advisor Zamorano Student Association |
| 2020-present | Graduate Program Officer for Poultry Science |
| 2020-present | Advisor to the Poultry Science Graduate Students Club |
| 2019-present | Chair of the feed milling committee |

| | |
|--------------|--|
| 2019-2021 | Co-advisor to the Poultry Science Club |
| 2016-2019 | Member of feed milling committee |
| 2016-2019 | Member of farm committee |
| 2018-present | Brewer Service Award Committee |
| 2017 | Member of Poultry Science Academic Review Committee |
| 2016 | Search committee for West Alabama Fisheries Extension Specialist |
| 2015 | Search committee for Feed Mill Assistant Professor |

2. Professional Societies

Chair/Moderator:

| | |
|------|---|
| 2022 | Southeastern Poultry Science Association, Session chair and judge |
| 2017 | Poultry Science Association, Session Chair |
| 2017 | Poultry Science Association, Moderator |
| 2017 | Southeastern Poultry Science Association, Judge |

Industry:

| | |
|--------------|--|
| 2019-present | Advisor for Alabama Feed and Grain Association |
| 2017-present | Member of integrator interest group, American Feed Industry Association (AFIA) |
| 2016-present | Member of the planning committee for feed mill management seminar in Nashville, TN. US. Poultry and Egg Association. |
| 2016-present | Member of the planning committee for the Poultry Nutrition and Milling seminar in Guntersville, AL. Alabama Poultry and Egg Association. |

Graduate Student – Committee member

1. Stephanie Velasquez, Ph.D., University Reader, School of Fisheries, Auburn University
2. Maria Tereza Terra, Ph.D., Poultry Science, Auburn University
3. Stephanie Philpot, Ph.D., Poultry Science, Auburn University.
4. Luis Muñoz, Ph.D., Poultry Science, Auburn University.
5. Cesar Escobar Lobo, M.S., Poultry Science, Auburn University.
6. Samuel Leiva, M.S., Poultry Science, Auburn University.
7. Luis Muñoz, M.S., Poultry Science, Auburn University.
8. Tanner Wise, M.S., Poultry Science, Auburn University.
9. Cesar Mayorga, Ph.D., Department of Civil Engineering, Auburn University.
10. Natalia Sitanaka. Ph.D., Universidade Estadual de Maringa.
11. Jomara Broch. Ph.D., Universidade Estadual do Oeste do Parana, Campus Marechal Candido Rondon, Parana, Brazil.
12. Lindsey Spencer, M.S., Poultry Science, Auburn University.
13. Stephanie Philpot, M.S., Poultry Science, Auburn University.
14. Alexandra Amorocho, Ph.D., University Reader, School of Fisheries, Auburn University.
15. Oscar Tejada, M.S., Poultry Science, Auburn University.

16. Klinton McCafferty, M.S., Poultry Science, Auburn University.
17. Chunxi Huang, Ph.D., University Reader, Department of Animal Sciences, Auburn University
18. Brendan Gould, M.S., Poultry Science, Auburn University.
19. Suryo Gandasmita, M.Ag., Poultry Science, Auburn University.
20. Ruben Kriseldi, M.S., Poultry Science, Auburn University.

Graduate Student - Major Professor

1. José Rodrigo Hernandez, M.S., Poultry Science.
2. Isaac Vargas, M.S., Poultry Science, Spring 2020 (current Ph.D. Student, Auburn University, Department of Poultry Science).
3. Susan Bonilla, M.S., Poultry Science (Peco Foods, Tuscaloosa Alabama)
4. Joseph Gulizia, M.S., Poultry Science (current Ph.D. Student, Auburn University, Department of Poultry Science).
5. Martha Rueda, M.S., Poultry Science (current Ph.D. Student, Auburn University, Department of Poultry Science).
6. Fozol Korim Ovi, M.S., Poultry Science (current Ph.D. Student, Mississippi State University, Department of Poultry Science).
7. Andrea Rubio, M.S. Poultry Science, Auburn University, (current Ph.D. Student, North Carolina State University, Department of Poultry Science).

Student Interns and Visiting Scholars, Country

1. Beatriz Onishi, Brazil
2. Isadora Pegoraro Pallaoro, Brazil
3. Erasmo Flores, El Salvador
4. Urias Castillo, Guatemala
5. Eva Guzman, Honduras
6. Cristina Simoes, Brazil
7. Patricia Soster, Brazil
8. Leopoldo Almeida, Brazil
9. Sureerat Thuekeaw, Thailand
10. Santiago Sasia, Argentina
11. Sebastian Velez, Colombia
12. Cesar Lobo, Bolivia
13. Isaac Vargas, Ecuador
14. Cleison de Souza, Brazil
15. Danny Patiño, Ecuador
16. Edman Mendez, Guatemala
17. Susan Bonilla, Honduras
18. Xiyuan Wang, China
19. Martha Rueda, Honduras
20. Jenny Alejandra Lopez, Colombia
21. Allan Pinto, Honduras
22. Juan Carlos Aranibar, Bolivia
23. Ronald Pivaral, Guatemala
24. Endhier Lezcano, Panamá

COMMUNITY OUTREACH ACTIVITIES

Feed processing is an integral part of the poultry production in Alabama and each year approximately 5.5 million tons of feed are produced in the state. The goal of my feed mill program is to support the existing industry in Alabama and USA and to serve as a catalytic agent that bring new ideas and innovation essential for the future of the industry in the state. I work with the feed and poultry industry in Alabama as well as companies in other states by providing educational programs in areas of feed mill regulations and compliance, feed safety, process control, ingredient and feed quality, and broiler nutrition. Since 2015, companies have started complying with the Food Safety Modernization Act (Good Manufacturing Practices and Hazard Analysis and risk based Preventive Controls), therefore one of my focus has been to assist poultry and other feed mills to comply with this federal rule. I was involved in reviewing the standardized Food Safety Modernization Act Training for preventive controls qualified individuals (PCQI) and has helped to organize three PCQI trainings at the Charles C. Miller Jr. Center using the standardized curriculum approved by FDA. Preventive controls qualified individuals have the responsibility to develop and implement written animal food safety plans for animal food facilities.

I also organize hands-on workshops to train feed mill managers and supervisors in the region in basic feed milling operations such as grinding, batching, mixing, pelleting, and quality control of ingredients and finished feeds. I also visit feed mills in Alabama, United States, and internationally to improve their process.

I collaboration with Kansas State University and the United States Soybean Export Council (USSEC) I helped to develop trainings in poultry production and feed processing of Soy Excellence Centers in Nigeria, Southeast Asia, and Latin America. Over 2,000 participants have been trained so far, but this number is expected to increase. The online and in person trainings has helped to increase the productivity of the animal industry around the world and increase food security as companies are able to offer more affordable poultry products to the final consumer.

CERTIFICATIONS

1. Lead Instructor for the Animal Food Rule of the Food Safety Modernization Act. Training for FSPCA Preventive Controls for Animal Food. Food Safety Preventive Control Alliance. Certificate # f62f4215
2. Preventive Control Qualified Individual for the Animal Food Rule of the Food Safety Modernization Act. Training. FSPCA Preventive Control for Animal Food. Food Safety Preventive Control Alliance. Certificate # f62f4215
3. Preventive Control Qualified Individual for the Human Food Rule of the Food Safety Modernization Act. Training. FSPCA Preventive Control for Human Food. Food Safety Preventive Control Alliance. Certificate # 15263d89

PEER-REVIEWED JOURNAL PUBLICATIONS

1. Vargas, J. I., J. P. Gulizia, S. M. Bonilla, S. Sasia, and W. J. Pacheco. 2023. Apparent metabolizable energy and amino acid digestibility of corn from different origin fed to male broilers from 12 to 18 days of age. Accepted in *Animals*.
2. Alfaro, G. F., V. Palombo, M. D'Andrea, W. Cao, Y. Zhang, J. Beever, R. B. Muntifering, **W. J. Pacheco**, S. P. Rodning, X. Wang, and S. J. Moisa. 2023. Hepatic transcript profiling in beef cattle: effect of rumen-protected niacin supplementation. *PLoS ONE* 18(8): e0289409.
3. Munoz, L. R., M. A. Bailey, J. T. Krehling, D. V. Bourassa, M. R. Hauck, **W. J. Pacheco**, B. Chaves-Cordoba, K. S. Chasteen, A. A. Talorico, C. Escobar, A. Pietruska, and K. S. Macklin. 2023. Role of mannan oligosaccharide supplementation with and without a *Campylobacter jejuni* challenge in broilers. *Poult. Sci.* 102: 102609.
4. *Vargas, J. I., J. P. Gulizia, S. M. Bonilla, S. Sasia, and W. J. Pacheco. 2023. Effect of corn origin on broiler performance, processing yield, and nutrient digestibility from 1 to 35 days of age. *Animals* 2023, 13, 1248. *J. Appl. Anim. Res.* 51:1, 308-322.
5. *Gulizia, J. P., S. M. Bonilla, J. I. Vargas, S. J. Sasia, S. Llamas-Moya, T. Doung, and W. J. Pacheco. 2023. The effects of phytase and multicarbohydase complex containing alpha-galactosidase on performance, processing yield, and nutrient digestibility in the broiler chicken. *J. Appl. Anim. Res.* Vol. 51, NO. 1, 308-322.
6. Alfaro, G. F., R. B. Muntifering, W. J. Pacheco, S. P. Rodning, S. J. Moisa. 2023. Effects of endophyte-infected tall fescue on performance of genotyped pregnant beef cows supplemented with rumen-protected niacin. *Livest Sci.* 270-105206.
7. Munoz, L. R., M. A. Paul, M. A. Bailey, J. T. Krehling, R. Hauck, **W. J. Pacheco**, K. S. Chasteen, A. A. Talorico, C. Escobar, and D. V. Bourassa and K. S. Macklin. 2023. Effect of yeast cell wall on performance, pathogen colonization, innate immune response, histomorphology, and slaughter characteristics of broiler chickens inoculated with *Campylobacter jejuni* at day 21. Accepted in *Poult. Sci.* 102:102609.
8. Downs, K. M., **J. P. Gulizia**, G. R. Harder, E. K. Stafford, S. J. Sasia, and **W. J. Pacheco**. 2023. Corn particle size variation effects on broiler performance, organ weights, and nutrient digestibility during the early growout period (day 1 to 21). *J. Appl. Poult. Res.* 32:100327.
9. Slimen I, B., N. Taha, and **W. Pacheco**. 2022. Betalains in animal nutrition and health: importance os animal feed supplements: A review. *Agricultural reviews*, Volume 43 Issue 2: 178 – 185.
10. Leiva, S. F., J. L. Sandoval, G. Abascal Ponciano, J. L. Flees, A. J. Calderon, **W. J. Pacheco**, and C. W. Starkey. 2022. Improper sample preparation negatively affects near infrared reflectance spectroscopy (NIRS) nutrient analysis of ground corn. *Animal Feed Science and Technology.* 293:115492.
11. *Hernandez, J. R., J. P. Gulizia, J. B. Adkins, M. S. Rueda, S. I. Haruna, **W. J. Pacheco**, and K. M. Downs. 2022. Effect of phytase level and form on broiler performance, tibia characteristics, and residual fecal phytate phosphorus in broilers from 1 to 21 days of age. *Animals* 2022, 12, 1952.
12. *Gulizia, J. P., M. S. Rueda, F. K. Ovi, S. M. Bonilla, R. Prasad, M.E. Jackson, O. Gutierrez, and **W. J. Pacheco**. 2022. Evaluate the effect of a commercial heat stable

- phytase on broiler performance, tibia ash, and mineral excretion from 1 to 49 days of age assessed using nutrient reduced diets. *J. Appl. Poult. Res.* 31(3):100276.
13. Downs, K. M., J. P. Gulizia, E. K. Stafford, and **W. J. Pacheco**. 2022. Influence of varying dietary kudzu leaf meal particle size on performance, breast weight, and organ weight of broiler chickens from 1 to 21 days of age. *Poultry* (1) 30-39. doi.org/10.3390/poultry1010004.
 14. Jones, M. K., J. E. Ferrel, F. L. S. Castro, and **W. J. Pacheco**. 2022. The effects of various levels of distillers dried grains with solubles (DDGS) and a dacitic (rhyolitic) tuff breccia on pellet production rate and durability. *J. Appl. Poult. Res.* 31:100250.
 15. *Rueda, M., A. A. Rubio, C. W. Starkey, F. Mussini, and **W. J. Pacheco**. 2022. Effect of conditioning temperature on pellet quality, performance, nutrient digestibility, and processing yield of broilers. *J. Appl. Poult. Res.* 31:100235.
 16. Hauck, R., and **W. J. Pacheco**. 2021. Detection of *Coccidia* Oocysts in Litter and Feces of Broilers in a Floor Pen Trial. *Journal of Parasitology.* 107(6). 878-881.
 17. Ayres, V. E., M. E. Jackson, S. A. Cantly, S. J. Rochell, B. C. Bodle, **W. J. Pacheco**, M. S. Rueda, C. A. Bailey, K. Gardner, T. P. Boltz, and J. S. Moritz. 2021. The effects of Optiphos and Optiphos Plus on 21-day broiler performance and tibia mineralization. *J. Appl. Poult. Res.* 30:100210.
 18. ***Pacheco, W. J.**, D. B. Patiño, J. I. Vargas, J. P. Gulizia, K. S. Macklin, and T. J. Biggs. 2021. Effect of partial replacement of inorganic zinc and manganese with zinc methionine and manganese methionine on live performance and breast myopathies of broilers. *J. Appl. Poult. Res.* 30:100204.
 19. De Souza, C., C. Eyng, A. AM. Viott, A. S. de Avila, **W. J. Pacheco**, N. R. Junior, T. L. Kohler, K. I. Tenorio, E. H. Cirilo, and R. V. Nunes. 2021. Effect of dietary guanidinoacetic acid and nucleotides supplementation on growth performances, carcass traits, meat quality and occurrence of myopathies in broilers. *Livestock Science.* 251: 104659
 20. Alfaro, J. F., S. Rodriguez-Zas, B. R. Southey, R. Muntifering, S. P. Rodning, **W. J. Pacheco**, and S. Moisés. 2021. Complete blood count analysis on beef cattle exposed to fescue toxicity and rumen-protected niacin supplementation. *Animals.* 11(4), 988; <https://doi.org/10.3390/ani11040988>.
 21. Schnuelle G, E.K. Blythe, R. Cole, S. Taylor, G. F. Alfaro, R. B. Muntifering, **W. J. Pacheco**, S. P. Rodning, and S. J. Moisa. 2021. Evaluation of alterations in uterine blood flow using Doppler ultrasonography in pregnant, genotyped beef cows consuming endophyte-infected tall fescue seeds and supplemented with rumen-protected niacin. *J. Vet. Sci. Res.* DOI: [10.23880/oajvsr-16000207](https://doi.org/10.23880/oajvsr-16000207).
 22. Bethonico Terra, M. T., **W. J. Pacheco**, M. Harrison, B. A. McCrea, and R. Hauck. 2021. A survey of coccidia and nematodes in pastured poultry in the state of Georgia Avian Diseases. *Avian Diseases.* 65(2):250-256.
 23. Broch, J., V. D. L. Savaris, L. Wachholz, E. H. Cirilo, G. L. S. Tesser, **W. J. Pacheco**, C. Eyng, G. M. Pesti and R. V. Nunes. 2021. Influence of phytate and phytase on performance, bone, and blood parameters of broilers at 42 days old. *S. Afr. J. Anim. Sci.* 51:160-171.
 24. Muñoz, L., **W. J. Pacheco**, R. Hauck, and K. S. Macklin. 2021. Evaluation of commercially manufactured animal feeds to determine presence of *Salmonella*, *Escherichia coli* and *Clostridium perfringens*. *J. Appl. Poult. Res.*

25. *A. Corzo, J. Lee, J. I. Vargas, M. Silva, and **W. J. Pacheco**. 2020. Determination of the optimal digestible arginine to lysine ratio in Ross 708 male broilers. *J. Appl. Poult. Res.* <https://doi.org/10.1016/j.japr.2020.100136>.
26. *Ovi, F. K., R. Hauck, J. Grueber, F. Mussini, and **W. J. Pacheco**. 2020. Effects of pre-pelleting whole corn inclusion on feed particle size, pellet quality, growth performance, carcass yield, and digestive organ development and intestinal microbiome of broilers between 14 to 42 day of age. *J. Appl. Poult. Res.* <https://doi.org/10.1016/j.japr.2020.10.012>.
27. *Ovi, F. K. C. Bortoluzzi, T. J. Applegate, C. R. Starkey, K. S. Macklin, A. Morey, **W. J. Pacheco**. 2020. Effects of pre-pelleting whole corn inclusion on broiler performance, intestinal microbiota, and carcass characteristics. *J. Appl. Poult. Res.* <https://doi.org/10.1016/j.japr.2020.100114>.
28. Damasceno, J. L., C. S. Rocha, C. Eyng1, J. Broch, V. D. L. Savaris, L. Wachholz, G. L. S. Tesser, A. S. Avila, **W. J. Pacheco**, and Ricardo V. Nunes. 2020. Corn Distillers' dried grains with solubles to feed broiler chickens from 22 to 42 days of age. *J. Appl. Poult. Res.* 29:573-583.
29. *Rubio, A., J. B. Hess, W. Berry, W. A. Dozier III, and **W. J. Pacheco**. 2020. Effect of corn particle size during the starter, grower, and finisher periods on broiler performance. *J. Appl. Poult. Res.* 29:352-361.
30. Tillman, N. S., M. K. Jones, and **W. J. Pacheco**. 2020. Influence of feed ingredients, conditioning temperature and a dacitic tuff breccia (AZOMITE®) on pellet production rate and pellet quality. *J. Appl. Poult. Res.* 29:162-170.
31. *Rubio, A. A., J. B. Hess, W. D. Berry, W. A. Dozier III, and **W. J. Pacheco**. 2020. Effects of feed form and amino acid density on productive and processing performance of broilers. *J. Appl. Poult. Res.* 29:95-105.
32. Min, B. R., F. Abrahamsen, N. Gurung, J. H. Lee, J. W. Joo, **W. J. Pacheco**. 2019. Association of peanut skin in diet alters average daily gain, ruminal and blood metabolites, and carcass traits associated with *Haemonchus contortus* infection. *Anim. Nutr.* 5:278-285.
33. Xu, Y., C. R. Stark, P. R. Ferket, C. M. Williams, **W. J. Pacheco**, and J. Brake. 2015. Effect of dietary coarsely ground corn on broiler live performance, gastrointestinal tract development, apparent ileal digestibility of energy and nitrogen, and digesta particle size distribution and retention time. *Poult. Sci.* 94:53-60.
34. **Pacheco, W. J.**, C. R. Stark, P. R. Ferket, and J. Brake. 2014. Effect of trypsin inhibitor and particle size of expeller extracted soybean meal on broiler live performance and weight of gizzard and pancreas. *Poult. Sci.* 93:2245-2252.
35. **Pacheco, W. J.**, C. R. Stark, P. R. Ferket, and J. Brake. 2013. Evaluation of soybean meal source and particle size on broiler performance, nutrient digestibility, and gizzard development. *Poult. Sci.* 92:2914-2922.

PROCEEDINGS

1. **Pacheco, W. J.** 2023. Influence of feed processing in animal performance. BOKU Symposium. Feeding strategies at times of scarce resources. Vienna, Austria, April.

2. Hess, J. B., K. S. Macklin, **W. J. Pacheco**, R. Hauck, and W. Berry. 2019. Current trends in litter management. Midwest Poultry Federation. Minneapolis, MN. March, 2019.
3. **Pacheco, W. J.**, J. B. Hess, C. R. Stark, and A. Fahrenholz. 2018. Effect of feed manufacturing on poultry performance. Arkansas Nutrition Conference. Rogers AR. September 2018.
4. **Pacheco, W. J.**, and J. B. Hess. 2017. The effects of nutrient intake and feed ingredient quality on performance and product quality in broilers and broiler breeders. 10th International Congress, AVEM 2017. Queretaro, Mexico.
5. **Pacheco, W. J.** 2017. The effect of feed processing on broiler performance. 10th International Congress, AVEM 2017. Queretaro, Mexico.
6. Hess, J.B., **W. J. Pacheco**, W.A. Dozier III, K.S. Macklin and W.D. Berry, 2015. Identifying and Troubleshooting Nutritional Problems. Aviagen Nutritional School, October 15-16, 2015, Auburn, AL.

Articles published through Alabama Cooperative Extension System (ACES)

1. Philpot, S., **W. J. Pacheco**, J. Gulizia, K. Downs. 2022. Backyard and small poultry flock management series. Feeding the laying hen. Alabama A&M & Auburn Universities Extension. ANR-2913.
2. Downs, K., **W. J. Pacheco**, J. Gulizia. 2022. Backyard and small poultry flock management series. Brooding tips for successful bird performance. Alabama A&M & Auburn Universities Extension. ANR-2920.
3. **Pacheco, W. J.**, J. Gulizia, and I. Vargas. 2021. Effect of diet particle size on poultry performance. Alabama A&M & Auburn Universities Extension. ANR-2289.
4. **Pacheco, W. J.**, K. S. Macklin, and P. Brown. 2020. Economic Impact of a new feed mill in Alabama. Alabama A&M & Auburn Universities Extension. ANR-2673.
5. Bourassa, D. B., A. Giron, K. L. Woods, **W. J. Pacheco**, and K. S. Macklin. 2020. Mejora de la calidad e inocuidad de huevos en pequeños gallineros. Alabama A&M & Auburn Universities Extension. ANR-2657.
6. Bourassa, D. B., K. L. Woods, **W. J. Pacheco**, and K. S. Macklin. 2020. Enhancing Egg Quality and Safety in Small Flocks. Alabama A&M & Auburn Universities Extension. ANR-2642.
7. Macklin, K. S., S. Bonilla, **W. J. Pacheco**, and D. B. Bourassa. 2019. Bioseguridad para las aves de traspatio. Alabama A&M & Auburn Universities Extension. ANR-2611.
8. **Pacheco, W. J.**, D. V. Bourassa, K. S. Macklin, and J. B. Hess. 2019. Broiler chicken development, Day 1 to Day 50. Alabama A&M & Auburn Universities Extension. ANR-2482.
9. Bourassa, D. V., **W. J. Pacheco**, K. Macklin, J. Hess. 2018. Protect yourself from Salmonella in backyard poultry. Small Poultry Flocks. Alabama A&M & Auburn Universities Extension.

10. **Pacheco, W. J.**, C. R. Stark, A. Fahrenholz. 2015. Effects of diet particle size on poultry performance. Alabama A&M & Auburn Universities Extension. ANR-2289.

POPULAR PRESS ARTICLES

1. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2023. Prioritization. Feedstuffs. July, 2023.
2. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2023. Check list for feed mill visits. Feedstuffs. June, 2023.
3. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. Critical thinking skills. Feedstuffs. May, 2023.
4. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2023. Future feed mill employees. Feedstuffs. April, 2023.
5. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2023. Feed mill automation. Feedstuffs. February, 2023.
6. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2022. Preparing for maintenance. Feedstuffs. November, 2022.
7. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2022. Importance of pellet quality on animal performance. Feedstuffs. October, 2022.
8. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2022. Pellet durability testing. Feedstuffs. September, 2022.
9. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2022. Empowering employees through training. Feedstuffs. August, 2022.
10. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2022. Hammer- and pellet mill grinding and its effect on the microstructure of pellets. July, 2022.
11. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2022. Do what you say, then document it. June, 2022.
12. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2022. Importance of record keeping for regulatory compliance and to improve daily operations. Feedstuffs. May, 2022.
13. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2022. Recall plans. Feedstuffs. April, 2022.
14. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2022. Biosecurity – New Challenges for the Feed Industry. Feedstuffs. March, 2022.
15. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2022. A look back in time. Feedstuffs. February, 2022.
16. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2022. Quality control program without quality assurance can be costly. Feedstuffs. January, 2022.
17. Fahrenholz, A. C., **W. J. Pacheco**, C. R. Stark. 2021. 2021 CFIA Feed Production Technology School addresses industry issues. Feedstuffs. December 2021.
18. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2021. The sustainability in the feed mill; what does it mean?. Feedstuffs. November 2021.
19. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2021. Role of feed mills in the poultry value chain. Feedstuffs. October 2021.

20. Fahrenholz, A. C., **W. J. Pacheco**, C. R. Stark. 2021. Don't forget maintenance programs. Feedstuffs. August 2021.
21. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2021. The future of the feed industry workforce. Feedstuffs. July 2021.
22. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2021. Factors influencing pellet quality. Feedstuffs. June 2021.
23. Fahrenholz, A. C., **W. J. Pacheco**, C. R. Stark. Considerations for Batching Dry Ingredients. Feedstuffs. May 2021.
24. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2021. Shrink. Feedstuffs. April 2021.
25. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2021. Bulk load out systems offer advantages when properly configured. Feedstuffs. March 2021.
26. Fahrenholz, A. C., **W. J. Pacheco**, C. R. Stark. 2021. Packaging considerations aid in marketing. Feedstuffs. February 2021.
27. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2021. Selecting a pellet die. Feedstuffs. January, 2021.
28. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2021. Steam generation and boilers 101. Feedstuffs. January 2021.
29. Fahrenholz, A. C., **W. J. Pacheco**, C. R. Stark. 2020. Managing feed mill in midst of pandemic. Feedstuffs. Vol. 92(12). page 24.
30. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2020. Maintaining production, feed quality balance. Feedstuffs. Vol. 92(11). page 24.
31. Fahrenholz, A. C., **W. J. Pacheco**, C. R. Stark. 2020. How do subordinates know what you know. Feedstuffs. Vol. 92(10), page 28.
32. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2020. Measuring conditioner retention time. Feedstuffs. Vol. 92(09), page 28.
33. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2020. Optimal particle size in broiler diet hard to gauge. Feedstuffs. Vol. 92(08). page 24.
34. Fahrenholz, A. C., **W. J. Pacheco**, C. R. Stark. 2020. Transportation: The mobile arm of your facility. Feedstuffs. Vol. 92(06).
35. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2020. Preventing dust explosions a must. Feedstuffs. Vol. 92(05), page 28.
36. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2020. Understanding bulk density important. Feedstuffs. Vol. 92(04), page 28.
37. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2020. Importance of infrastructure systems emphasized. Feedstuffs. Vol. 92(03), page 28.
38. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2020. Keep infrastructure, material handling systems tiptop. Feedstuffs. Vol. 92(02), page 28.
39. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2020. Tips for feed conditioning, cooling in winter. Feedstuffs. Vol. 92(01), page 28.
40. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2019. FSMA CGMPs Check Up - Part II. Feedstuffs. Vol. 91(12), page 28.
41. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2019. FSMA CGMPs Check Up - Part I. Feedstuffs. Vol. 91(11), page 28.
42. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2019. Post-pellet liquid application systems 101. Feedstuffs. Vol. 91(10), page 32.

43. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2019. Effective safety culture starts at the top. *Feedstuffs*. Vol. 91(09), page 28.
44. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2019. Liquid addition at mixer considered. *Feedstuffs*. Vol. 91(08), page 32.
45. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2019. Points of feed industry recall plan covered. *Feedstuffs*. Vol. 91(07), page 32.
46. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2019. Organization key to well-functioning feed mill. *Feedstuffs*. Vol. 91(05), page 32.
47. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2019. Pellet Quality – What is your analysis method? *Feedstuffs*. Vol. 91(04), page 32.
48. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2019. New grain, feed industry technologies available. *Feedstuffs*. Vol. 91(03), page 35.
49. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2019. Leland McKinney was true feed industry advocate. *Feedstuffs*. Vol. 91(02), page 36.
50. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2018. Feed Manufacturing Technology – The Road Map to the Future. *Feedstuffs*. Vol. 90(11), page 36.
51. Hess, J. B., A. Morey, and **W. J. Pacheco**. 2018. Insect proteins in poultry feeds. *Practical Applications, Alabama Poultry*.
52. **Pacheco, W. J.**, J. B. Hess, Fahrenholz, A. C., and C. R. Stark. 2018. Integrated approach helps maintain pellet, feed quality. *Feedstuffs*. Vol. 90(11), page 36.
53. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2018. Quality assurance best when comprehensive, clear cut. *Feedstuffs*. Vol. 90(10), page 36.
54. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2018. Feed Quality - What does PDI really mean?. *Feedstuffs*. Vol. 90(09), page 35.
55. Hess, J. B., K. M. Downs, **W. J. Pacheco** and K. S. Macklin. 2018. Organic trace minerals shown to improve broiler health, performance. *Feedstuffs*. Vol. 90(08), pages 30 and 31.
56. Hess, J., R. Hauck, **W. J. Pacheco**, and D. Bourassa. 2018. 48 hours to processing. *Practical Applications, Alabama Poultry*.
57. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2018. Strategies to reduce microbial load in feeds. *Feedstuffs*. Vol. 90(08), pages 35 and 36.
58. Fahrenholz, A., C.R. Stark, and **W. J. Pacheco**. 2018. Pest control plan a must in feed mill. *Feedstuffs*. Vol. 90(07), page 35.
59. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2018. Implementing 5S or 6S housekeeping in mill. Vol. 93(06), page 43.
60. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2018. Crumblers, crumble quality influence broiler growth. Vol. 90(05), pages 36 and 39.
61. Fahrenholz, A. C., **W. J. Pacheco**, and C. R. Stark. 2018. Contradicting decisions in feed manufacturing. Vol. 90(04), pages 35 and 36.
62. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2018. Back to the basics in feed mill. *Feedstuffs*. Vol. 90(03), page 35.
63. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2018. What does larger/smaller particle size mean for feed mill managers? *Feedstuffs*. Vol. 90(02), pages 36 and 37.
64. Fahrenholz, A. C., **W. J. Pacheco**, and C. R. Stark. Cooler weather affects cooler performance. *Feedstuffs*. Vol. 89(12), pages 35 and 40.

65. **Pacheco, W. J.**, Fahrenholz, A. C., and C. R. Stark. 2017. Feed conditioning during winter months. *Feedstuffs*. Vol. 89(11), page 35.
66. Stark, C. R., A. C. Fahrenholz, and **W. J. Pacheco**. 2017. Mixing 101: Basics of mixers, potential issues. *Feedstuffs*. Vol. 89(10), page 40.
67. Fahrenholz, A. C., **W. J. Pacheco** and C. R. Stark. 2017. No one size fits all in feed manufacturing. *Feedstuffs*. Vol. 89(9), page 36.
68. **Pacheco, W. J.**, and J. B. Hess. 2017. Maintaining feed quality on the farm. *Practical Applications, Alabama Poultry*.
69. **Pacheco, W. J.**, C. R. Stark, and A. C. Fahrenholz. 2017. Sampling ingredients, finished feeds essential. *Feedstuffs*. Vol. 89(8), page 36.
70. Stark, C. R., A. C. Fahrenholz, and **W. J. Pacheco**. 2017. Managing by the numbers: Benchmarking Vital. *Feedstuffs*. Vol. 89(7), page 36.
71. Fahrenholz, A. C., **W. J. Pacheco**, and C. R. Stark. 2017. Do what you say, then document it. *Feedstuffs*. Vol. 89(6), page 43.
72. Stark, C. R., **W. J. Pacheco**, and A. C. Fahrenholz. 2017. The daily grind of the hammermill. *Feedstuffs*. Vol. 89(5), page 34.
73. Hess, J. B., E. van Santen, **W. J. Pacheco**, C. W. Starkey, W. D. Berry and W. A. Dozier. 2017. Lupins: An alternative protein source for poultry and pigs. *WATTAgNet.com*
74. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2017. Strategies to reduce shrink during feed processing. *Feedstuffs*. Vol. 89(4), page 36.
75. Fahrenholz, A. C., C. R. Stark, and **W. J. Pacheco**. 2017. Mills need to provide context for growth performance numbers. *Feedstuffs*. Vol. 89(3), pages 40 and 41.
76. Hess, J. B., **W. J. Pacheco**, W. D. Berry, and d W. A. Dozier. 2017. Mycotoxins in broiler and breeder feeds. *Practical Applications, Alabama Poultry*.
77. Stark, C. R., A. C. Fahrenholz, **W. J. Pacheco**. 2018. Lab method affects particle size data. *Feedstuffs*. Vol. 89(2), page 35.
78. Stark, C. R., A. C. Fahrenholz, and **W. J. Pacheco**. 2017. University feed programs continue to grow. *Feedstuffs*. Vol. 89(1), page 40.
79. **Pacheco, W. J.**, C. R. Stark, A. Fahrenholz. 2017. Improving pellet quality in poultry feed. *Feedstuffs*. Volume 88(10), pages 39 and 40.
80. **Pacheco, W. J.**, A. Fahrenholz, and C. Stark. 2016. Feed manufacturing: Pellet drying, cooling. *Feedstuffs*. Volume 88(03), pages 42 and 45.
81. Hess, J. B., **W. J. Pacheco**, and W. D. Berry. 2016. Practical thoughts on feeding small poultry flocks. *Chicken Whisperer Magazine*, Spring 2016.

PEER-REVIEWED RESEARCH ABSTRACTS

1. Vargas, J. I., J. P. Gulizia, J. R. Hernandez, C. T. Simões, E. Guzman, S. M. Bonilla, J. T. Lee, R. Adhikari, and **W. J. Pacheco**. 2023. Dose response of xylanase enzyme on viscosity, digestibility of nutrients, and performance of broiler chickens fed wheat-based diets. *Poult. Sci.* 102.
2. Orellana Galindo, L. A., C. Escobar Lobo, V. M. Tashiguano, J. Krehling, M. A. Bailey, K. Macklin, **W. J. Pacheco**. 2023. Relationship between eggshell translucency and color intensity with egg quality parameters on broiler eggs. *Poult. Sci.* 102.

3. Simões, C. T., E. G. Guzman, J. P. Gulizia, J. I. Vargas, J. R. Hernandez, **W. J. Pacheco**. 2023. Evaluation of pellet internal particle size and grinding during pelleting of feeds for broiler chickens. *Poult. Sci.* 102.
4. Hernandez, J. R., J. P. Gulizia, J. I. Vargas, S. M. Bonilla, S. Thuekeaw, **W. J. Pacheco**. 2023. Effect of dietary metabolizable energy levels and conditioning temperature on broiler performance, nutrient digestibility, and tibia ash from 1 to 42 days of age. *Poult. Sci.* 102.
5. Gulizia, J. P., M. T. Bethonico Terra, Z. Khalid, J. I. Vargas, S. M. Bonilla, J. R. Hernandez, S. Thuekeaw, J. Krehling, R. Hauck, K. Macklin, W. A. Dozier, K. McCafferty, **W. J. Pacheco**. 2023. Individual and combined effects of phytase and butyric acid on jejunum histomorphometry, cecal microbiome, and jejunum tight-junction gene expression of YPM x Ross 708 male broilers. *Poult. Sci.* 102.
6. Philpot, S. C., R. Hauck, A. Aderibigbe, K. Macklin, **W. J. Pacheco**, S. J. Rochell, B. Dozier. 2023. Response of broiler chickens vaccinated against coccidiosis to diets containing varying amino acid density and a nucleotide-rich extract during the pre-starter and starter periods. *Poult. Sci.* 102.
7. **Pacheco, W. J.**, and C. Starkey. 2023. Evaluation of conditioning temperature and retention time in the hygieniser on *Enterococcus faecium*, true amino acids digestibility, and metabolizable energy. European Symposium of Poultry Nutrition. Rimini, Italy.
8. **Pacheco, W. J.**, and S. M. Bonilla. 2023. Effect of corn particle size and pellet diameter on the internal particle size of pelleted feeds. European Symposium of Poultry Nutrition. Rimini, Italy.
9. Gulizia, J. P., J. I. Vargas, S. M. Bonilla, J. R. Hernandez, S. Thuekeaw, R. Hauck, K. Macklin, W. A. Dozier, III, K. W. McCafferty, and **W. J. Pacheco**. 2023. Individual and combined effects of phytase and butyric acid on performance and processing yield of YPM x Ross 708 male broilers reared to 42 days of age. Abstr. M100. International Poultry Scientific Forum.
10. Hernandez, J. R., J. P. Gulizia, J. I. Vargas, S. M. Bonilla, S. Thuekeaw, and **W. J. Pacheco**. 2023. Effect of dietary metabolizable energy levels and conditioning temperature on broiler performance, processing yield and footpad dermatitis from 1 to 42 days of age. *Poult. Sci.* 102 (E-suppl. 1):X. [Accepted]
11. Strobeck, R. E., A. D. McConnell, C. M. Broadwater, J. P. Gulizia, **W. J. Pacheco**, and K. M. Downs. 2023. The impact of retention time during the conditioning process of a starter diet on broilers grown to 21 days. *Poult. Sci.* 102.
12. Gulizia, J., J. Adkins, K. Downs, S. Haruna, and **W. J. Pacheco**. 2022. Influence of phytase level and form on residual phytate phosphorus in broiler manure. *Proc. XXVI World's Poultry Congress*. Abstract ID 1495.
13. **W. J. Pacheco**. 2022. Effect of corn particle size and pellet diameter on broiler performance and nutrient digestibility from 1 to 39 days of age. *Proc. XXVI World's Poultry Congress*. Abstract ID 1938.
14. Gulizia, J., J. Vargas, S. Bonilla, S. Sasia, S. Llamas-Moya, T. Duong, and **W. J. Pacheco**. 2022. Exogenous phytase and a multicarbohydase containing α -galactosidase influences broiler performance, processing yield, and nutrient digestibility from 1 to 42 days of age. *Proc. XXVI World's Poultry Congress*. Abstract ID 1983.

15. J. Vargas-Patino, A. Corzo, J. Lee, M. Silva, **W. Pacheco**. 2022. Dietary arginine requirements for the optimization of growth performance and carcass traits of male broilers. *Proc. XXVI World's Poultry Congress*. Abstract ID 1952.
16. Bonilla, S., M. Rueda, C. de Souza, J. Starkey, C. Starkey, and **W. J. Pacheco**. 2022. Evaluation of particle size and feed form and pellet diameter on performance and nutrient digestibility of broiler at 39 d of age. *Proc. XXVI World's Poultry Congress*. Abstract ID 1796.
17. Gulizia, J. P., J. I. Vargas, S. M. Bonilla, J. R. Hernandez, L. M. Almeida, P. S. Carvalho, S. Thuekeaw, S. Llamas-Moya, T. Duong, and **W. J. Pacheco**. 2022. Broiler performance and nutrient digestibility from 1 to 42 days of age was influenced by nutrient density and supplementation of a multicarbohydrase containing α -galactosidase. *Poult. Sci.* 101
18. Escobar, C., J. I. Vargas, O. B. Fiallos, M. Reina, J. P. Gulizia, S. M. Bonilla, J. R. Hernandez, L. M. Almeida, S. Thuekeaw, P. Soster, **W. J. Pacheco**, C. W. Starkey, and K.S Macklin. 2022. Effect of conditioning temperatures and retention times on crumble quality. *Poult. Sci.* 101
19. Terra, M. T. B., J. P. Gulizia, P. S. Carvalho, L. M. Almeida, J. R. Hernandez, S. Thuekeaw, B. A. McCrea, **W. J. Pacheco**, R. Hauck. 2022. The effects of possible alternative treatments against *Ascaridia galli* on nutrient digestibility in infected laying hens. *Poult. Sci.* 101
20. Bonilla, S. M., J. P. Gulizia, J. I. Vargas, S. Sasia, L. M. Almeida, P. Soster, and **W. J. Pacheco**. 2022. Grinding during pelleting as influenced by corn particle size and pellet diameter. *Poult. Sci.* 101
21. Thuekeaw, S., L. C. Smith, S. M. Bonilla, J. P. Gulizia, M. S. Rueda, J. Escobar, J. Froetschner, and **W. J. Pacheco**. 2022. Effect of conditioning temperature and production rate on moisture content and pellet durability index. *Poult. Sci.* 101
22. Vargas, J. I., J. P. Gulizia, S. M. Bonilla, S. J. Sasia, and **W. J. Pacheco**. 2022. Metabolizable energy and amino acid digestibility of corn from different origin for male broilers. *Poult. Sci.* 101
23. Vargas, J. I., J. P. Gulizia, S. M. Bonilla, J. R. Hernandez, L. M. Almeida, S. Thuekeaw, P. Soster, C. E. Lobo, O. B. Fiallos, M. A. Reina Antillon, **W. J. Pacheco**, and C. W. Starkey. 2022. Effect of conditioning temperature on pellet quality measured with Holmen and ASABE S269.5 methods. *Poult. Sci.* 101.
24. McConnell, A. D., R. E. Strobeck, J. P. Gulizia, **W. J. Pacheco**, K. M. Downs. 2022. Assessing retention time during the conditioning process of a starter diet fed from day 1 to 21 and the impact on broiler performance. *Poult. Sci.* 101.
25. Escobar Lobo, C., K. Macklin, **W. Pacheco**, and R. Hauck. 2022. Survey of feed mills around United States for select bacterial pathogens. Abstr. M43. International Poultry Scientific Forum.
26. Bonilla, S., J. Gulizia, S. Sasia, M. Rueda, and **W. Pacheco**. 2022. New methodology to measure internal particle size in pellets and to quantify the degree of grinding during pelleting. Abstr. M65. International Poultry Scientific Forum.
27. Vargas Patino, J., J. Gulizia, S. Bonilla, S. Sasia, and **W. Pacheco**. 2022. Effect of corn samples from different origins on broiler performance, processing yield and nutrient digestibility from 1 to 35 days of age. Abstr. M66. International Poultry Scientific Forum.

28. Gulizia, J. P., J. I. Vargas, S. Bonilla, S. J. Sasia¹, S. Llamas-Moya, T. Duong, **W. J. Pacheco**. 2022. Phytase and multicarbohydase interactions on broiler performance, processing yield, and nutrient digestibility from 1 to 42 days of age. Abstr. M66. International Poultry Scientific Forum.
29. Almeida, L. M., S. M. Bonilla, J. P. Gulizia, J. I. Vargas, J. R. Hernandez, **W. J. Pacheco**. 2022. Effect of conditioning temperature and retention time on pellet durability index. P330. International Poultry Scientific Forum.
30. McConnell, A. D., J. P. Gulizia, E. K. Stafford, M. N. Beel, R. S. Fibus, C. E. Gregory, J. P. Latham, K. M. Downs, and **W. J. Pacheco**. 2022. An assessment of feed color effects on broiler performance parameters during the starter phase. *Poult. Sci.* 101 (E-suppl. 1):105
31. Machado, O., L. Mejia, V. Naranjo, **W. Pacheco**, Y. Martinez. 2022. Reduced crude protein diets maintains growth and yield parameters of mixed-sex broilers while reducing nitrogen excretion, litter moisture, and ecological footprint. Abstr. M103. International Poultry Scientific Forum.
32. **W. J. Pacheco**, M. S. Rueda, M. Jackson, and O. Gutierrez. 2021. Effect of phytase enzyme level and source on broiler performance and tibia ash from 1 to 21 days. *Proc. XXVI World's Poultry Congress*. Abstract ID 412.
33. Ovi, F., W. Pacheco, and C. Starkey. The effect of pre-pelleting whole corn inclusion on growth performance, processing yield, and organ development of broilers. *XXVI World's Poultry Congress*. Abstract ID 509.
34. Vargas, J. I., A. Corzo, J. T. Lee, M. Silva, and **W. J. Pacheco**. 2021. Determination of the optimal digestible arginine to lysine ratio in Ross 708 male broilers. *Poult. Sci. E-Suppl.* 1:120.
35. Gulizia, J. P., S. M. Bonilla, J. I. Vargas, S. J. Sasia, L. C. Smith, and **W. J. Pacheco** 2021. Diets with varying inclusion rates of phytase and energy levels influence broiler performance from 1 to 42 days of age. *Poult. Sci. E-Suppl.* 1:142.
36. Ayres, V., M. Jackson, S. Cantley, S. J. Rochell, C. Crumpacker, T. Lee, B. Bodle, **W. J. Pacheco**, M. Rueda Lastres, C. A. Bailey, K. N. Gardner, T. Boltz, and J. Moritz. 2021. Multi- experiment evaluation of increasing phytase activity from Optiphos and Optiphos Plus on 21-day broiler performance and tibia mineralization. *Poult. Sci. E-Suppl.* 1:147.
37. Stafford, E. K., G. Harder, K. M. Downs, J. P. Gulizia, S. J. Sasia, and **W. J. Pacheco**. 2021. Effects of varying corn particle size on broiler performance and organ development from 1 to 21 days of age. *Poult. Sci. E-Suppl.* 1:210.
38. Gulizia, J. P., S. J. Sasia, S. M. Bonilla, J. I. Vargas, L. C. Smith, J. L. Sandoval, C. W. Starkey, and **W. J. Pacheco**. Evaluation of different particle size analysis methodologies for finely to coarsely ground corn. *Poult. Sci. E-Suppl.* 1:409P.
39. Bonilla, S. M., J. P. Gulizia, S. J. Sasia, J. I. Vargas, **W. J. Pacheco**, and C. W. Starkey. 2021. Effect of corn particle size on bulk density, angle of repose, and pellet quality. *Poult. Sci. E-Suppl.* 1:414P.
40. Harder, G., E. K. Stafford, K. M. Downs, J. P. Gulizia, S. J. Sasia, and **W. J. Pacheco**. 2021. Assessing dietary corn particle size influences on broilers grown from 1 to 21 days of age. *Poult. Sci. E-Suppl.* 1:415P.
41. Sasia, S. J., J. P. Gulizia, S. M. Bonilla, J. I. Vargas, and **W. J. Pacheco**. 2021. Conditioning temperature directly affects pellet quality. *Poult. Sci. E-Suppl.*

1:416P.

42. Smith, L. C., S. M. Bonilla, J. P. Gulizia, M. Rueda Lastres, F. K. Ovi, J. Escobar, J. Froetschner, and **W. J. Pacheco**. 2021. Effect of production rate on pellet durability index. *Poult. Sci. E-Suppl.* 1:417P.
43. Muñoz, L., **W. J. Pacheco**, J. Krehling, K. Chasteen, A. Talorico, K. Macklin. 2021. Evaluation of commercially manufactured animal feeds to determine presence of *Salmonella*, *Escherichia coli* and *Clostridium perfringens*. Abstr. M20. International Poultry Scientific Forum.
44. Adkins, J. B., K. M. Downs, J. P. Gulizia, M. S. Rueda, **W. J. Pacheco**. 2021. Effect of phytase level and form on broiler performance from 1 to 21 days of age. M34. International Poultry Scientific Forum.
45. Gulizia, J. P., M. S. Rueda, F. K. Ovi, S. M. Bonilla, L. C. Smith, H. E. Reaves, M. Jackson, O. Gutierrez, **W. J. Pacheco**. 2021. Effect of a commercial heat stable phytase with varying inclusion levels on broiler performance and tibia ash from 1 to 49 days. M35. International Poultry Scientific Forum.
46. Bonilla, S., M. Rueda, C. de Souza, J. Starkey, C. Starkey, **W. J. Pacheco**. 2021. Evaluation of particle size, feed form and pellet diameter on performance and nutrient digestibility of broilers at 39 d of age. M51. International Poultry Scientific Forum.
47. Smith, L. C., S. M. Bonilla, J. P. Gulizia, M. S. Rueda, F. K. Ovi, J. Escobar, J. Froetschner, and **W. J. Pacheco**. 2021. Effect of conditioning temperature and pellet die compression ratio on pellet durability index. M52. International Poultry Scientific Forum.
48. Stafford, E. K., K. M. Downs, J. P. Gulizia, **W. J. Pacheco**. 2021. Influence of varying kudzu leaf meal particle sizes added to a broiler diet. P33. International Poultry Scientific Forum.
49. Alfaro G. F., R. Muntifering, S. P. Rodning, J. G. Schnuelle, R. Cole, S. Taylor, E. Blythe, **W. J. Pacheco**, S. J. Moisés. 2020. 75 Effects of endophyte-infected tall fescue on performance of genotyped pregnant beef cows and heifers supplemented with rumen-protected niacin. *J. Amin. Sci.* <https://doi.org/10.1093/jas/skaa278.087>
50. Hauck R., and **W. J. Pacheco**. 2020. Coccidia dynamics in litter and feces of chickens in a floor pen trial. American Association of Avian Pathologists Annual Meeting.
51. Bethonico Terra, M. T., R. Hauck, and **W. J. Pacheco**. 2020. Parasitological surveillance in a pastured poultry farm. American Association of Avian Pathologists Annual Meeting.
52. Rueda, M.*, O. Machado, D. Patiño, R. Pivaral, **W. J. Pacheco**, M. Jackson, and O. Gutierrez. 2020. Effect of phytase type and inclusion level on broiler performance and tibia ash from 1 to 21 d of age. *Poult. Sci.* 109, E-Suppl. 1:152.
53. Calderon, A., G. A. Abascal-Ponciano, J. L. Sandoval, **W. J. Pacheco**, C. W. Starkey. Comparison of corn particle size utilizing different sieving methods. *Poult. Sci.* 109, E-Suppl. 1:228.
54. Flowers, H. J., M. E. Chilenje, M. R. Presume, J. L. Sandoval, G. A. Abascal-Ponciano, **W. J. Pacheco**, C. W. Starkey. Assessment of the angle of repose as a method to measure the flowability of different particle sizes of ground corn using different sample amounts and box dimensions. *Poult. Sci.* 109, E-Suppl. 1:229.

55. Abascal-Ponciano, G. A., **W. J. Pacheco**, C. W. Starkey. Comparison of the accuracy of different particle size field evaluation methods. *Poult. Sci.* 109, E-Suppl. 1:230.
56. Leiva, S. F., G. A. Abascal-Ponciano, **W. J. Pacheco**, C. W. Starkey. Improper handling, preparation, and calibration of samples for NIRS analysis increases variability and decreases accuracy of nutrient concentration results. *Poult. Sci.* 109, E-Suppl. 1:233.
57. Ovi, F.*, **W. J. Pacheco**, C. Starkey, and M. Rueda. 2020. Effect of different inclusion levels of whole corn from 14 to 42 days on productive and processing performance of broilers. Abstr. M52. International Poultry Scientific Forum.
58. Rueda, M.*, S. Bonilla, C. de Souza, F. Ovi, J. Starkey, C. Starkey, J. Cueva-Caldas, and **W. J. Pacheco**. 2020. Evaluation of particle size, feed form and pellet diameter on broiler performance and processing yield from 1 to 39 days of age. Abstr. M53. International Poultry Scientific Forum.
59. Muñoz, L.*, **W. J. Pacheco**, J. Krehling, K. Chasteen, A. Tailorico, L. Brooks, J. Evatt, and K. Macklin. 2020. Evaluation of commercially manufactured animal feeds to determine presence of *Salmonella*, *E. coli*, and *Clostridium perfringens*. Abstr. M127. International Poultry Scientific Forum.
60. Abascal-Ponciano, G.*, Calderon, J. Flees, D. Patino, S. Leiva, J. Sandoval, M. Presume, K. Ordonez, L. Avila, **W. J. Pacheco**, and C. Starkey. 2019. Evaluation of different particle size analysis methods for ground corn. *Poult. Sci.* 108, E-Suppl. 1:7.
61. Leiva, S.*, J. Sandoval, J. Flees, A. Calderon, G. Abascal-Ponciano, K. Ordonez, D. Patino, L. Avila, M. Presume, **W. J. Pacheco**, and C. Starkey. 2019. Effect of particle size on near infrared reflectance spectroscopy (NIRS) nutrient analysis of ground corn. *Poult. Sci.* 108, E-Suppl. 1:8.
62. Patino, D.*, E. Mendez, J. Sandoval, J. Flees, A. Calderon, G. Abascal-Ponciano, K. Ordonez, L. Avila, M. Presume, **W. J. Pacheco**, and C. Starkey. 2019. Effect of ground corn particle size and soybean oil addition on angle of repose and flow time. *Poult. Sci.* 108, E-Suppl. 1:9.
63. Presume, M.*, J. Sandoval, G. Abascal-Ponciano, A. Calderon, D. Patino, K. Ordonez, L. Avila, S. Leiva, J. Flees, **W. J. Pacheco**, and C. Starkey. 2019. Assessment of angle of repose as a tool to measure the flowability of different particle size ground corn with and without added soybean oil. *Poult. Sci.* 108, E-Suppl. 1:10.
64. Sandoval, J.*, S. Leiva, J. Flees, A. Calderon, G. Abascal-Ponciano, K. Ordonez, D. Patino, L. Avila, M. Presume, **W. J. Pacheco**, and C. Starkey. 2019. Effect of particle size and oil addition on near infrared spectroscopy (NIRS) nutrient analysis of ground corn. *Poult. Sci.* 108, E-Suppl. 1:11.
65. Calderon, A.*, G. Abascal-Ponciano, L. Avila, J. Flees, S. Leiva, K. Ordonez, D. Patino, M. Presume, J. Sandoval, **W. J. Pacheco**, and C. Starkey. 2019. Evaluation of different methods for particle size analysis of milled corn with added soybean oil. *Poult. Sci.* 108, E-Suppl. 1:57.
66. Avila, L.*, G. Abascal-Ponciano, A. Calderon, S. Leiva, J. Flees, K. Ordonez, D. Patino, M. Presume, **W. J. Pacheco**, and C. Starkey. 2019. Evaluation of the Aviagen Turkeys shaker sieve to determine particle size for ground corn with

- increasing additions of soybean oil. *Poult. Sci.* 108, E-Suppl. 1:58.
67. Rueda Lastres, M.* , A. Rubio, C. Starkey, F. Mussini, and **W. J. Pacheco**. 2019. Effect of conditioning temperature on broiler performance, nutrient digestibility and processing yield. *Poult. Sci.* 108, E-Suppl. 1:60.
 68. Spencer, L.* , L. Avila, D. Patino, A. Calderon, **W. J. Pacheco**, E. Monu, O. Fasina, L. Bell, and C. Starkey. 2019. Evaluation of differential scanning calorimetry for analysis of starch gelatinization in multi-component animal feed. *Poult. Sci.* 108, E-Suppl. 1:61.
 69. Monu, **W. J. Pacheco**, C. Starkey, and J. Caldas-Cuevas. 2019. Thermal inactivation of the Salmonella surrogate Enterococcus faecium ATCC 8459 during extended feed conditioning. *Poult. Sci.* 108, E-Suppl. 1:202.
 70. **Pacheco, W. J.**, D. Patino, J. Hess, K. Macklin, D. Bourassa, and T. J. Biggs. 2019. Effect of zinc methionine and manganese methionine on live performance and breast myopathies of broilers. *Poult. Sci.* 108, E-Suppl. 1:393.
 71. Spencer, L.* , L. Avila, A. Calderon, D. Patino, **W. J. Pacheco**, E. Monu, O. Fasina, C. Starkey. 2019. Evaluation of differential scanning calorimetry to assess starch gelatinization of multicomponent feed processed with different conditioner temperatures and Hygieniser retention times. Abstr. M55. International Poultry Scientific Forum.
 72. Rubio, A. A.* , A. Lopez, J. B. Hess, W. D. Berry, W. A. Dozier III and **W. J. Pacheco**. 2018. Effects of feed form and amino acid densities on productive and processing performance of broilers. *Poult. Sci.* 107, E-Suppl. 1:16.
 73. Rubio, A. A.* , A. Lopez, J. B. Hess, W. D. Berry, W. A. Dozier III and **W. J. Pacheco**. 2018. Effects of corn particle size during the finisher period on broiler growth performance. *Poult. Sci.* 107, E-Suppl. 1:499p.
 74. Linares, L., M. Rebollo, A. Fireman, D. Neves, A. Grove, D. Bourassa, J. Hess, and **W. J. Pacheco**. 2018. Effect of digestible lysine levels and metal-amino acid complexes on performance and breast meat characteristics in broilers. *Poult. Sci.* 107, E-Suppl. 1:500p.
 75. Franklin, A., B. R. Min, N. K. Gurung, J. H. Lee, and **W. J. Pacheco**. 2018. The effect of a linear relationship between the dose of peanut skin supplementation and animal performance, ruminal fermentation, blood metabolites, and carcass traits in meat goats confined indoor. *J. Anim. Sci. (Suppl. 1)*. American Society of Animal Science 2018. PSVII-A.
 76. Rubio, A.* , J. Aranibar, H. Fuentes, and **W. J. Pacheco**. 2018. Effect of different inclusion levels of whole corn on productive and processing performance of broilers. Abstr. M79. International Poultry Scientific Forum.
 77. Bortoluzzi, C., A. Rubio, J. Aranibar, T. Applegate, and **W. J. Pacheco**. 2018. Effect of whole corn inclusion in the diets of broiler chickens on ileal and cecal microbiota. P189. International Poultry Scientific Forum.
 78. Giambrone, J. J., **W. J. Pacheco**, P. Alfonso, C. L. Perera, and M. Torres. 2017. Collaboration with Cuban Institutions on poultry health and management. The American Association of Avian Pathologists Meeting.
 79. Alfonso, P. C. L. Perera, M. Torres, **W. J. Pacheco**, and J. J. Giambrone. 2017. Development of optimal on farm composting methods. The American Association of Avian Pathologists Meeting.

80. Rubio, A.*, A. Pinto, J. B. Hess, and **W. J. Pacheco**. 2017. Evaluation of the effect of corn particle size on pellet quality using three methodologies. *Poult. Sci.* 106, E-Suppl. 1:15.
81. Rubio, A. A.*, A. Pinto, J. B. Hess, and **W. J. Pacheco**. 2017. Effect of corn particle size on during the starter and grower periods on broiler performance. *Poult. Sci.* 106, E-Suppl. 1:484p.
82. **Pacheco, W. J.**, W. D. Berry, and J. B. Hess, R. Cabrera, and M. Richards. 2017. Live performance and footpad health in broilers fed an additive composed of secondary plant compounds (SPC) and vaccinated for coccidiosis. Abstr. T172. International Poultry Scientific Forum.
83. Rubio, A. A.*, W. Dozier, E. Lezcano, and **W. J. Pacheco**. 2017. Effects of feed form during the starter period on productive and processing performance of broilers. Abstr. M84. International Poultry Scientific Forum.
84. **Pacheco, W. J.**, C. R. Stark, P. R. Ferket, J. Brake, and A. C. Fahrenholz. 2016. Effect of heat treatment on TMEn and AA digestibility of expeller-extracted soybean meal. Abstr. 1-0264. XXV World Poultry Congress, Beijing China.
85. **Pacheco, W. J.**, W. D. Berry, and J. B. Hess. 2016. Broiler performance and footpad health in broilers fed and additive composed of secondary plant compounds. Abstr. T189. International Poultry Scientific Forum.
86. **Pacheco, W. J.**, M. Knauer, E. van Heugten, C. R. Stark, A. C. Fahrenholz, and C. E. Phillips. 2015. The effect of DDGS particle size and pellet quality on grower to finisher pig performance. M69. ASAS Midwestern.
87. **Pacheco, W. J.**, C. R. Stark, P. R. Ferket, J. Brake, and A. C. Fahrenholz. 2014. Effect of particle size of distillers dried grains with solubles and soybean meal on pellet quality, nutrient digestibility, and broiler live performance. *Poult. Sci.* 93, E-Suppl. 1:70.
88. **Pacheco, W. J.**, M. Knauer, E. van Heugten, C. R. Stark, A. C. Fahrenholz, and C. E. Phillips. 2014. The effect of regrinding DDGS and SBM on pellet quality in swine finishing diets. M55. ASAS Midwestern.
89. **Pacheco, W. J.**, C. R. Stark, P. R. Ferket, J. Brake, and A. C. Fahrenholz. 2014. Effect of inclusion level and metabolizable energy values of DDGS on pellet quality, nutrient digestibility, incidence of footpad lesions, and broiler live performance. Abstr. M26. International Poultry Scientific Forum.
90. **Pacheco, W. J.**, C. R. Stark, P. R. Ferket, J. Brake, and A. C. Fahrenholz. 2013. Effect of particle size and inclusion level of DDGS and pellet quality on growth performance and gastrointestinal development of broilers. *Poult. Sci.* 92, ESuppl. 1:41.
91. Fahrenholz, A. C., **W. J. Pacheco**, C. R. Stark, and J. Brake. 2013. Effect of pellet diameter on broiler live performance. *Poult. Sci.* 92, E-Suppl. 1:189.
92. **Pacheco, W. J.**, C. Stark, J. Brake, and P. Ferket. 2012. Evaluation of ESBM and corn particle size on broiler performance. Abstr. M23. International Poultry Scientific Forum.
93. **Pacheco, W. J.**, P. R. Ferket, C. R. Stark, and J. Brake. Particle Size Affects Digestibility of Soybean Meal and Other Ingredients. Carolina Feed Industry Association Meeting, 2011. Raleigh, NC.
94. **Pacheco, W. J.**, C. R. Stark, P. R. Ferket, and J. Brake. 2011. Evaluation of

- different levels of trypsin inhibitor and particle size of expeller-extracted SBM on broiler performance. *Poult. Sci.* 90, E-Suppl. 1:382.
95. **Pacheco, W. J.,** R. D. Malheiros, C. R. Stark, P. R. Ferket, and J. Brake. 2010. Effect of percentage pellet fines and house-walking schedule on broiler growth performance. *Poult. Sci.* 89, E-Suppl. 1:700.
 96. **Pacheco, W. J.,** C. R. Stark, P. R. Ferket, and J. Brake. 2010. Evaluation of expeller-produced and solvent-extracted soybean meal at two particle sizes on broiler performance. Abstr. 25. International Poultry Scientific Forum.
 97. **Pacheco, W. J.,** and C. R. Stark. 2009. Effect of feed sample weight on pellet durability index. *Poult. Sci.* 88, E-Suppl. 1:248p.

INVITED LECTURES

1. **Pacheco, W. J.,** J. P. Gulizia, and J. I. Vargas. 2023. Carbohydrase strategies in poultry nutrition. 2023. Arkansas Nutrition Conference. Little Rock Arkansas. August, 29th.
2. **Pacheco, W. J.** 2023. Broiler production and management. SEC Americas Poultry Track Intermediate Level. Zamorano, Honduras. July 4th.
3. **Pacheco, W. J.** 2023. Poultry nutrition. SEC Americas Poultry Track Intermediate Level. Zamorano, Honduras. July 4th.
4. **Pacheco, W. J.** 2023. Heat stress mitigation. SEC Americas Poultry Track Intermediate Level. Zamorano, Honduras. July 4th.
5. **Pacheco, W. J.** 2023. Poultry value chain overview. SEC Americas Poultry Track Intermediate Level. Zamorano, Honduras. July 4th.
6. **Pacheco, W. J.** 2023. Ingredients, processing, and feed formulation. SEC Americas Poultry Track Intermediate Level. Zamorano, Honduras. July 4th.
7. **Pacheco, W. J.** 2023. Impact of pelleting on the particle size of the microstructure of pelleted feeds. 1st Symposium Feed Technology, Process and Nutrition interaction. Curitiba, Brazil.
8. **Pacheco, W. J.** 2023. Impact of pelleting on amino acid digestibility. 1st Symposium Feed Technology, Process and Nutrition interaction. Curitiba, Brazil.
9. **Pacheco, W. J.** 2023. How to effectively communicate with others in your process chain. Producing quality feed through effective communication course. Northern Crops Institute. North Dakota.
10. **Pacheco, W. J.** 2023. Influence of feed processing in animal performance. BOKU Symposium. Feeding strategies at times of scarce resources. Vienna, Austria.
11. **Pacheco, W. J.** 2023. Effect of feed processing on poultry performance. Buenos Aires, Argentina. Online.
12. **Pacheco, W. J.** 2023. Feed mill 101. Anitox internal training. Auburn, AL.
13. **Pacheco, W. J.** 2023. The competitiveness of the poultry industry around the globe. Study Abroad Program. Thessaloniki, Greece.
14. **Pacheco, W. J.** 2023. Webinar “Importance of particle size and pellet quality on animal performance”. The poultry podcast show.
15. **Pacheco, W. J.** 2023. The sustainability of the poultry industry. Poultry School in Spanish. Auburn Alabama.

16. **Pacheco, W. J.** 2023. Feed milling operations. Poultry School in Spanish. Auburn Alabama.
17. **Pacheco, W. J.** 2023. Batching and mixing operations. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
18. **Pacheco, W. J.** 2023. Particle size reduction operations. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
19. **Pacheco, W. J.** 2023. Principles of pelleting. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
20. **Pacheco, W. J.** 2023. Pellet cooling and crumbling. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
21. **Pacheco, W. J.** 2023. Post-pellet liquid applications. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
22. **Pacheco, W. J.** 2023. Finished feed load out. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
23. **Pacheco, W. J.** 2023. The effect of feed processing on animal performance. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
24. **Pacheco, W. J.** 2023. The effect of soybean meal from different origins on poultry nutrition. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
25. **Pacheco, W. J.** 2023. New technology in feed manufacturing. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
26. **Pacheco, W. J.** 2023. Understanding handling of feed ingredients for animal nutrition. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
27. **Pacheco, W. J.** 2023. Automation and statistical control. USSEC's 6th Poultry Feed Milling Training Course, Cairo Egypt.
28. **Pacheco, W. J.** 2022. The poultry industry in Alabama: Sustaining for the future. Farmer's federation, farm city week banquet. Jacksonville AL. November 15.
29. **Pacheco, W. J.** 2022. Influence of feed particle size and feed structure on intestinal health and poultry performance. Symposium: feeding strategies to improve the gut health and performance of poultry. Poultry Science Association, 3rd Latin American Scientific Conference. Iguazu Falls, Paraná, Brazil. October 4 to 6th.
30. **Pacheco, W. J.** 2022. Effect of feed processing on broiler performance. Feed milling workshop. Auburn University. September 28th.
31. **Pacheco, W. J.** 2022. General overview of the poultry industry. ACES – In service training. Auburn University. September 19th.
32. **Pacheco, W. J.** 2022. Importance of particle size and pellet quality on broiler performance. Northern Crops Institute, Grain Procurement Course (hybrid). Fargo, ND. September 15th.
33. Vargas, J. I., and **Pacheco, W. J.** 2022. Results of NCI international corn origin study. Northern Crops Institute, Grain Procurement Course (hybrid). Fargo, ND. September 15th.
34. **Pacheco, W. J.** 2022. Efecto del tamaño de partícula y calidad de pellet en el rendimiento de pollos de engorde. Latin American Poultry Congress, OVUM. San Pedro Sula, Honduras. September, 8th.
35. **Pacheco, W. J.** 2022. Feeds and nutrition. Small scale poultry webinar series. June 21st.

36. **Pacheco, W. J.** 2022. Efecto de la fabricación del alimento balanceado en el desempeño productivo de las aves. Congreso Aviespecialistas de México AC (AVEM). Queretaro, México. June 8th.
37. **Pacheco, W. J.** 2022. Effect of feed processing on poultry performance. Multi-state poultry feeding and nutrition conference and IFF's technical symposium. Indianapolis, IN, May 24 to 26.
38. **Pacheco, W. J.** 2022. Importance of early nutrition and broiler management for successful brooding. Multi-state poultry feeding and nutrition conference and IFF's technical symposium. Indianapolis, IN, May 24 to 26.
39. Macklin, K., D. B. Bourassa, L. Muñoz, M. Bailey, and **W. Pacheco.** 2022. Pre-harvest Salmonella Control. Industry workshop with Alltech. May 26th.
40. **Pacheco, W. J.** 2022. Heat stress mitigation with focus on nutritional alternatives during heat stress. USSEC's 28th Poultry production training program online training. May 17th.
41. **Pacheco, W. J.** 2022. Poultry value chain overview, processing, packaging, and distribution. USSEC's 28th Poultry production training program online training. May 17th.
42. **Pacheco, W. J.** 2022. Particle size for feeding broiler. Broiler nutrition and feed technology conference (online). United States Soybean Export Council. Indonesia. May 12th.
43. **Pacheco, W. J.** 2022. Hygiene in feed production. Broiler nutrition and feed technology conference (online). United States Soybean Export Council. Indonesia. May 12th.
44. **Pacheco, W. J.** 2022. Critical of early feeding on broiler. Broiler nutrition and feed technology conference (online). United States Soybean Export Council. Indonesia. May 11th.
45. **Pacheco, W. J.** 2022. Particle size reduction. Asia Soy Excellence Center 1st Feed Milling Course – Basic (online). United States Soybean Export Council. Southeast Asia, May 4 to 6th.
46. **Pacheco, W. J.** 2022. Batching and mixing system. Asia Soy Excellence Center 1st Feed Milling Course – Basic (online). United States Soybean Export Council. Southeast Asia, May 4 to 6th.
47. **Pacheco, W. J.** 2022. Pelleting principles. Asia Soy Excellence Center 1st Feed Milling Course – Basic (online). United States Soybean Export Council. Southeast Asia, May 4 to 6th.
48. **Pacheco, W. J.** 2022. Cooling and crumbling. Asia Soy Excellence Center 1st Feed Milling Course – Basic (online). United States Soybean Export Council. Southeast Asia, May 4 to 6th.
49. **Pacheco, W. J.** 2022. Liquid applications at mixer, handling, and storage. Asia Soy Excellence Center 1st Feed Milling Course – Basic (online). United States Soybean Export Council. Southeast Asia, May 4 to 6th.
50. **Pacheco, W. J.** 2022. Finish feed load out. Asia Soy Excellence Center 1st Feed Milling Course – Basic (online). United States Soybean Export Council. Southeast Asia, May 4 to 6th.

51. **Pacheco, W. J.** 2022. Animal nutrition for feed manufacturing. Asia Soy Excellence Center 1st Feed Milling Course – Basic (online). United States Soybean Export Council. Southeast Asia, May 4 to 6th.
52. **Pacheco, W. J.** 2022. Broiler Production and Management. SEC Southeast Asia poultry track basic level (online). United States Soybean Export Council. Southeast Asia, March 29th to April 1st.
53. **Pacheco, W. J.** 2022. Poultry Nutrition. SEC Southeast Asia poultry track basic level (online). United States Soybean Export Council. Southeast Asia, March 29th to April 1st.
54. **Pacheco, W. J.** 2022. Biosecurity. SEC Southeast Asia poultry track basic level (online). United States Soybean Export Council. Southeast Asia, March 29th to April 1st.
55. **Pacheco, W. J.** 2022. Heat stress mitigation. SEC Southeast Asia poultry track basic level (online). United States Soybean Export Council. Southeast Asia, March 29th to April 1st.
56. **Pacheco, W. J.** 2022. Poultry value chain. SEC Southeast Asia poultry track basic level (online). United States Soybean Export Council. Southeast Asia, March 29th to April 1st.
57. **Pacheco, W. J.** 2022. Record keeping, economics, and marketing. USSEC's 27th Poultry production training program online training. March 29th.
58. **Pacheco, W. J.** 2022. Hatchery and brooding management. USSEC's 27th Poultry production training program online training. March 29th.
59. **Pacheco, W. J.** 2022. Principles of pelleting. SEC Americas Feed Milling Track Basic Level. Zamorano, Honduras. March 18th.
60. **Pacheco, W. J.** 2022. Cooling and crumbling operations. SEC Americas Feed Milling Track Basic Level. Zamorano, Honduras. March 18th.
61. **Pacheco, W. J.** 2022. Liquid application at the mixer and post-pelleting. SEC Americas Feed Milling Track Basic Level. Zamorano, Honduras. March 18th.
62. **Pacheco, W. J.** 2022. Load out and feed delivery. SEC Americas Feed Milling Track Basic Level. Zamorano, Honduras. March 18th.
63. **Pacheco, W. J.** 2022. Grinding operations. SEC Americas Feed Milling Track Basic Level. Zamorano, Honduras. March 17th.
64. **Pacheco, W. J.** 2022. Batching and mixing operations. SEC Americas Feed Milling Track Basic Level. Zamorano, Honduras. March 17th.
65. **Pacheco, W. J.** 2022. Nutritional and formulation feed strategies. USSEC Maghreb Poultry feed formulation conference online training. March 17th.
66. **Pacheco, W. J.** 2022. Soybean meal quality and poultry performance. USSEC Maghreb Poultry feed formulation conference online training. March 17th.
67. **Pacheco, W. J.** 2022. Feed management – processing, raw materials, and formulation. SEC Americas Poultry Track Basic Level. Zamorano, Honduras. March 16th.
68. **Pacheco, W. J.** 2022. Poultry processing, packaging, and distribution. SEC Americas Poultry Track Basic Level. Zamorano, Honduras. March 16th.
69. **Pacheco, W. J.** 2022. Fundamentals of poultry production and management. SEC Americas Poultry Track Basic Level. Zamorano, Honduras. March 15th.

70. **Pacheco, W. J.** 2022. Broiler production and management. SEC Americas Poultry Track Basic Level. Zamorano, Honduras. March 15th.
71. **Pacheco, W. J.** 2022. Poultry nutrition. SEC Americas Poultry Track Basic Level. Zamorano, Honduras. March 15th.
72. **Pacheco, W. J.** 2022. Biosecurity. SEC Americas Poultry Track Basic Level. Zamorano, Honduras. March 15th.
73. **Pacheco, W. J.** 2022. Heat stress mitigation. USSEC's 26th Poultry production training program online training. March 15th.
74. **Pacheco, W. J.** 2022. Poultry processing, packaging, and distribution. USSEC's 26th Poultry production training program online training. March 15th.
75. **Pacheco, W. J.** 2022. Global competitiveness of the poultry industry. USSEC Maghreb Poultry feed formulation conference online training. February, 24th.
76. **Pacheco, W. J.** 2022. Broiler management for successful brooding. USSEC Maghreb Poultry feed formulation conference online training. February, 24th.
77. **Pacheco, W. J.** 2022. Using new feed milling technologies efficiently to increase productivity and animal performance. USSEC's 25th Poultry production training program online training. February 15th.
78. **Pacheco, W. J.** 2022. Common mistakes and solutions during feed processing. USSEC's 25th Poultry production training program online training. February 15th.
79. **Pacheco, W. J.** 2022. Broiler management for successful brooding. USSEC's 24th Poultry production training program online training. January 11th.
80. **Pacheco, W. J.** 2022. Nutritional considerations during feed formulation. USSEC's 24th Poultry production training program online training. January 11th.
81. **Pacheco, W. J.** 2021. Efecto de la fabricación del alimento balanceado en el desempeño productivo de las aves. LPN Congress and Expo. Miami Florida.
82. **Pacheco, W. J.** 2021. Optimizing feed quality, digestibility, and production goals for poultry. Carolina Feed Industry Association Fall Symposium. Raleigh, NC.
83. **Pacheco, W. J.** 2021. Maintaining a balance between feed quality, nutrient digestibility and production goals. Symposium: A comprehensive approach to maximize feed quality and meat bird potential through feed manufacture. Poultry Science Association.
84. **Pacheco, W. J.** 2021. Importance of feed preparation in poultry nutrition. Middle East & Africa feed manufacturing training center. Saudi Arabia poultry industry virtual training course.
85. **Pacheco, W. J.** 2021. Feed processing overview. Middle East & Africa feed manufacturing training center. Saudi Arabia poultry industry virtual training course.
86. **Pacheco, W. J.** 2021. Practical nutritional considerations in broiler diets. Saudi Arabia poultry industry virtual training course.
87. **Pacheco, W. J.** 2021. Broiler production and management. Soybean Export Council. Poultry Track Basic Level Course. Southeast Asia.
88. **Pacheco, W. J.** 2021. Poultry nutrition. Soybean Export Council. Poultry Track Basic Level Course. Southeast Asia.
89. **Pacheco, W. J.** 2021. Biosecurity. Soybean Export Council. Poultry Track Basic Level Course. Southeast Asia.
90. **Pacheco, W. J.** 2021. Poultry value chain overview. Soybean Export Council. Poultry Track Basic Level Course. Southeast Asia.

91. **Pacheco, W. J.** 2021. Competitividad global en la producción de pollos de engorde. Pan-American School of Agriculture. Zamorano, Honduras.
92. **Pacheco, W. J.** 2021. Importance of particle size on poultry nutrition and particle size analysis. Alltech Feed Milling Workshop. Auburn, AL.
93. **Pacheco, W. J.** 2021. Demonstration: testing mixer uniformity. Alltech Feed Milling Workshop. Auburn, AL.
94. **Pacheco, W. J.** 2021. Importance of pellet quality on poultry performance. Alltech Feed Milling Workshop. Auburn, AL.
95. **Pacheco, W. J.** 2020. Global competitiveness in broiler production. Poultry Seminar, Department of Poultry Science, Auburn University. (100%).
96. **Pacheco, W. J.** 2020. Importance of feed particle size on poultry performance. Semana Previtep, Tepatitlan de Morelos, Jalisco Mexico. (100%).
97. **Pacheco, W. J.** 2020. Pelleting for maximum performance – Effect of corn particle size and feed form on broiler performance. Feedstuffs/Kemin webinar.
98. **Pacheco, W. J.** 2020. Effect of feed processing on broiler performance. Fenavi-Colombia webinar.
99. **Pacheco, W. J.** 2020. Interrelationships between feed processing and nutrition on broiler performance. College of Agriculture, Summer virtual colloquium, Auburn University. (100%).
100. **Pacheco, W. J.** 2020. Particle size of ration in broiler feeding. Broiler Nutrition and Feed Technology, USSEC Webinar. (100%).
101. **Pacheco, W. J.** 2020. Global competitiveness in broiler production. Broiler Nutrition and Feed Technology, USSEC Webinar. (100%).
102. **Pacheco, W. J.** 2020. Alternative ingredients for poultry diets – what you need to know. Cooptastic. Alabama 4-H Center.
103. **Pacheco, W. J.** 2019. Effect of feed processing on poultry performance. Wayne Farms, Live operations and complex manager meeting. Prattville, AL.
104. **Pacheco, W. J.** 2019. Feed quality for optimum poultry performance. Alabama poultry industry workshop. Guntersville, AL.
105. **Pacheco, W. J.** 2019. Grinding and effect of particle size on animal performance. Universidade Estadual de Maringa. Maringa Parana, Brazil.
106. **Pacheco, W. J.** 2019. Batching and mixing, how to measure mixer uniformity. Universidade Estadual de Maringa. Maringa Parana, Brazil.
107. **Pacheco, W. J.** 2019. The pelleting process, how to measure pellet quality, effect of pellet quality on animal performance. Universidade Estadual de Maringa. Maringa Parana, Brazil.
108. **Pacheco, W. J.** 2019. Other processes; pellet coolers, cooling process, crumblers, and post liquid application systems for fat and enzymes. Universidade Estadual de Maringa. Maringa Parana, Brazil.
109. **Pacheco, W. J.** 2019. Grinding and effect of particle size on animal performance. Universidade Estadual de Marechal. Marechal Candido Rondon, Parana, Brazil.
110. **Pacheco, W. J.** 2019. Batching and mixing, how to measure mixer uniformity. Universidade Estadual de Marechal. Marechal Candido Rondon, Parana, Brazil.
111. **Pacheco, W. J.** 2019. The pelleting process, how to measure pellet quality, effect of pellet quality on animal performance. Universidade Estadual de Marechal. Marechal Candido Rondon, Parana, Brazil.

112. **Pacheco, W. J.** 2019. Other processes; pellet coolers, cooling process, crumblers, and post liquid application systems for fat and enzymes. Universidade Estadual de Marechal. Marechal Candido Rondon, Parana, Brazil.
113. **Pacheco, W. J.** 2019. Evaluation of *Enterococcus faecium* as a surrogate to measure the resistance of Salmonella during extended feed conditioning. Pilgrims Global Live Council. Albertville AL.
114. **Pacheco, W. J.** 2019. Influence of Feed Processing on Poultry Performance. Zinpro International Poultry Seminar. Chicago.
115. **Pacheco, W. J.** 2019. Sourcing, monitoring, and maintaining the quality of feed ingredients for performance and food safety. Zinpro International Poultry Seminar. Chicago.
116. **Pacheco, W. J.** 2019. Understanding the mill and how it all works. Bangkok, Thailand.
117. **Pacheco, W. J.** 2019. Practical commercial feed milling. Bangkok, Thailand.
118. **Pacheco, W. J.** 2019. Feed decontamination and bio-security, simple guidelines for a biosecure feed. Bangkok, Thailand.
119. **Pacheco, W. J.** 2019. Effect of soybean meal quality on poultry performance and nutrient digestibility. USSEC 6th Poultry round table for the feed industry in Maghreb. Skhirat, Morocco.
120. **Pacheco, W. J.** 2019. Technologies to improve feed quality and nutrient digestibility. USSEC 6th Poultry round table for the feed industry in Maghreb. Skhirat, Morocco.
121. **Pacheco, W. J.** 2019. Optimum particle size for poultry performance. USSEC 6th Poultry round table for the feed industry in Maghreb. Skhirat, Morocco.
122. **Pacheco, W. J.** 2019. Grinding/particle size effect on PDI. Feed Mill Management Seminar. Nashville, TN.
123. Hess, J. B., D. V. Bourassa, **W. J. Pacheco**, R. Hauck, W. D. Berry, and W. A. Dozier III. 2019. Field reports on the increase in antibiotic free broiler production in the U.S. International Conference and Expo on Animal Science and Veterinary Medicine. Durban, South Africa.
124. **Pacheco, W. J.** 2019. New Technology to Monitor Feed Quality. Latin American Summit. Atlanta, GA.
125. Hess, J. B., D. V. Bourassa, W. D. Berry, and **W. J. Pacheco**. 2018. U.S. Egg Production. 2nd U.S. Nigeria Agribusiness (Non-Oil) Investment Summit.
126. **Pacheco, W. J.** 2018. Practical considerations during grinding and pelleting. Wayne Farms Live ops, broiler and feed mill managers meeting. Lake Lanier Islands.
127. **Pacheco, W. J.**, J. B. Hess, C. R. Stark, and A. Fahrenholz. 2018. Effect of feed manufacturing on poultry performance. Arkansas Nutrition Conference. Rogers AR.
128. Hess, J. B., S. Bilgili, K. S. Macklin, **W. J. Pacheco**, and W. D. Berry. 2018. Litter condition and paw quality. Georgia broiler conference. Watkinsville, GA.
129. **Pacheco, W. J.**, J. B. Hess, C. R. Stark, and A. Fahrenholz. Influence of feed manufacturing on poultry performance. Poultry nutrition seminar. Auburn AL.
130. **Pacheco, W. J.** 2018. Tour of Bangkok Animal Research Center's feed Mill - which component does what. Aviagen Nutrition School. Bangkok, Thailand.

131. **Pacheco, W. J.** 2018. Practical production workshop – starter diet. Bangkok, Thailand.
132. **Pacheco, W. J.** 2018. An introduction to practical feed milling/on farm and in a commercial mill. Bangkok, Thailand.
133. **Pacheco, W. J.** 2018. Feed decontamination and bio-security, simple guidelines for a biosecure feed. Bangkok, Thailand.
134. **Pacheco, W. J.** 2018. Nutritional problems and solutions. Bangkok, Thailand.
135. **Pacheco, W. J.** 2018. Feed Mill Research Update, Auburn University. Poultry Nutrition and Milling Seminar. Huntsville, AL.
136. **Pacheco, W. J.** 2018. How to properly measure pellet quality and particle size. Feed Mill Management Seminar. Nashville, TN.
137. Hess, J. B., D. V. Bourassa, **W. J. Pacheco**, E. A. Monu, K. S. Macklin, and B. A. McCrea. 2018. Salmonella control in small poultry flocks. Bartow Florida Chicken Expo.
138. Hess, J. B., **W. J. Pacheco** and K. S. Macklin. 2018. Small poultry flocks- Management and feeding. Alabama Cooperative Extension System. Mobile, AL.
139. Hess, J. B., **W. J. Pacheco**, and B. A. McCrea. 2018. GMO free and organic feeds. Florida Chicken Expo.
140. Bourassa, D. V., J. B. Hess, **W. J. Pacheco**, and K. S. Macklin. 2018. GAP (Global Animal Partnership) commitments and what that means for growers and processors. Alabama Poultry Producers Commodity Organizational Meeting.
141. Hess, J. B., **W. J. Pacheco** and K. S. Macklin. 2017. Avoiding disease in small poultry flocks through management and feeding. 4H Boot Camp. Auburn, AL.
142. Giambrone, J. J., **W. J. Pacheco**, and J. Donald. 2017. The poultry industry in the United States. Agrocencias Congress. Havana, Cuba.
143. Hess, J.B., **W.J. Pacheco** and K.S. Macklin. 2017. Small poultry flocks- Management and feeding. Alabama Cooperative Extension System.
144. Hess, J.B., **W.J. Pacheco** and K.S. Macklin. 2017. Avoiding disease in small poultry flocks through management and feeding. Alabama Cooperative Extension System.
145. **Pacheco, W. J.** 2017. Good Manufacturing Practices during feed processing. 2017. Workshop Cooperative Chimú. Trujillo, Perú.
146. **Pacheco, W. J.** 2017. Quality Control of Ingredients and Finished Feeds. 2017. Workshop San Fernando. Lima, Perú.
147. **Pacheco, W. J.** 2017. Effect of feed processing on poultry performance. 2017. Workshop Redondos. Lima, Perú.
148. Hess, J. B., **W. J. Pacheco**, D. Bourassa, and K. S. Macklin. 2017. Basics plus economics of selling small-scale poultry products. Cullman. AL.
149. Hess, J.B., K.S. Macklin, **W. J. Pacheco** and J.J. Giambrone. 2017. Avian Influenza- Backyard poultry flocks. Small Scale Poultry Meeting. Cullman, AL.
150. **Pacheco, W. J.** 2017. An introduction to practical feed milling – on farm and in a commercial mill – step by step. Aviagen Training, Nutrition School.
151. **Pacheco, W. J.** 2017. Animal food safety hazards, overview of the food safety plan, preventive controls management components, sanitation controls, and recall plan. Preventive controls for animal food rule. Raleigh, NC.

152. Hess, J. B., K. S. Macklin, and **W. J. Pacheco**. 2017. Small Poultry Flocks – Management and Feeding. Farming 101 Series. Talladega. AL.
153. Hess, J. B., W. J. Pacheco and **K. S. Macklin**. 2017. Avoiding disease in small poultry flocks through management and feeding. Alabama Cooperative Extension System. Ashville, AL.
154. Hess, J. B., K. S. Macklin, and **W. J. Pacheco**. 2017. Avoiding Diseases in Small Poultry Flocks through Management and Feeding. Farming 101 Series. Talladega. AL.
155. Macklin, K.S., J.B. Hess and **W. J. Pacheco**. 2017. What is the VFD and how it impacts treating small flocks with antibiotics. Delaware Agriculture Week, Harrington DE.
156. **Pacheco, W. J.**, and J. B. Hess. 2017. The effects of nutrient intake and feed ingredient quality on performance and product quality in broilers and broiler breeders. 10th International Congress, AVEM 2017. Queretaro, Mexico.
157. **Pacheco, W. J.** 2017. The effect of feed processing on broiler performance. 10th International Congress, AVEM 2017. Queretaro, Mexico.
158. Hess, J. B., **W. J. Pacheco**, and K. S. Macklin. 2016. Small poultry flocks-Management and feeding. Baldwin County Extension.
159. Hess, J. B., **W. J. Pacheco** and K. S. Macklin. 2016. Small poultry flocks-Management and feeding. Mobile County Extension.
160. **Pacheco, W. J.** 2016. Nutrition and feed milling. Centro Nacional de Seguridad Agropecuaria (CENSA), La Havana, Cuba.
161. Hess, J. B., D. V. Bourassa, Bilgili, **W. J. Pacheco**, W. A. Dozier III, D. E. Conner, and W. D. Berry. 2016. The poultry industry – present and future. Poultry Seminar for potential, new, expanding, and experienced farmers. Cullman, AL.
162. Hess, J. B., S. F. Bilgili, K. S. Macklin, **W. J. Pacheco** and W.D. Berry. 2016. Optimizing Paw Quality. Pennsylvania Poultry Sales and Service Conference and 88th Northeastern Conference on Avian Diseases. State College, PA.
163. Hess, J. B., **W. J. Pacheco**, and K. S. Macklin. 2016. Small poultry flocks – Management and feeding.
164. **Pacheco, W. J.** 2016. Grinding: effect of particle size on poultry performance. Previtep week. Tepatitlan de Morelos, Jalisco Mexico.
165. **Pacheco, W. J.** 2016. Collaboration opportunities with Pan-American School of agriculture. E. T. and Vam York endowment international scholar seminar. Auburn University.
166. **Pacheco, W. J.** 2016. Animal food safety hazards, overview of the food safety plan, preventive controls management components, and sanitation controls. Preventive controls for animal food rule. Raleigh, NC.
167. **Pacheco, W. J.** 2016. Trypsin Inhibitors in Soybean Meal. China Agriculture University. Beijing, China.
168. Hess, J. B., S. F. Bilgili, K. S. Macklin, **W. J. Pacheco**, and W. D. Berry. 2016. Optimizing Foodpad Health. Sunbelt Expo. Moultrie, GA.
169. Hess, J. B., S. F. Bilgili, K. S. Macklin, **W. J. Pacheco**, and W. D. Berry. 2016. Optimizing Paw Quality.
170. **Pacheco, W. J.** 2016. Animal food safety hazards. Preventive controls for animal food rule. Auburn, AL.

171. **Pacheco, W. J.**, J. B. Hess, and K. S. Macklin. 2016. Effect of feed processing on Poultry Performance. 2016. Poultry Nutrition and Milling Seminar. Guntersville, AL.
172. **Pacheco, W. J.**, J. B. Hess, and K. S. Macklin. 2016. Feed quality for game birds. 2016. South Eastern Game Bird Breeders and Hunting Preserve Association Annual Short Course. Auburn AL.
173. **Pacheco, W. J.**, J. B. Hess, and K. S. Macklin. 2016. The Importance of the Education and How to Produce Animal Feeds. SPARK's Lecture. Clio, AL.
174. **Pacheco, W. J.**, J. B. Hess, and K. S. Macklin. 2016. Pellet quality: why it's important and how to get there. Feed Mill Management Seminar. Nashville, TN.
175. **Pacheco, W. J.** 2016. Introduction to feed mill operations. International Poultry Short Course. Athens, GA.
176. **Pacheco, W. J.** An introduction to practical feed milling – on farm and in a commercial mill – step by step. 2015. Aviagen Training, Nutrition School. Auburn, AL.
177. **Pacheco, W. J.** The effects of feed processing on monogastric nutrition. 2015. IGP Institute Basic Feed Manufacturing Short Course. Manhattan, KS.
178. Hess, J. B., **W. J. Pacheco**, and J. J. Giambrone. 2015. Mycotoxins in poultry feeds in the U.S. Aviagen Training, Nutrition School. Auburn, AL.
179. Hess, J. B. K. S. Macklin, and **W. J. Pacheco**. 2015. Feeding small poultry flocks. Alabama 4-H Chick Chain. Prattville, AL.
180. Hess, J. B., K. S. Macklin, and **W. J. Pacheco**. 2015. Feeding small poultry flocks. Basics of backyard livestock. Pelham, AL.
181. Macklin, K. S., and **W. J. Pacheco**. 2015. Poultry basics. Alabama Cooperative of Extension System. Clanton Country Expo. Clanton, AL.
182. Hess, J. B. K. S. Macklin, **W. J. Pacheco**, and J. J. Giambrone. 2015. Preparing for Avian Influenza. Wiregrass Poultry and Egg Association. Chancellor, AL.
183. Hess, J. B. K. S. Macklin, **W. J. Pacheco**, and J. J. Giambrone. 2015. Preparing for Avian Influenza. Central Alabama Poultry Association. Luverne, AL.
184. Hess, J.B., **K.S. Macklin**, W. Pacheco and J.J. Giambrone, 2015. Preparing for Avian Influenza. Wiregrass Poultry and Egg Association, Chancellor, AL.
185. Hess, J. B., and **W. J. Pacheco**. 2015. The veterinary feed directive – Effects on chicken performance. Alabama Farmers Federation, Poultry committee meeting. Montgomery, AL.
186. Hess, J. B. K. S. Macklin, **W. J. Pacheco**, and J. J. Giambrone. 2015. Avian influenza – Potential issues. Lee County 4 – H Teen leader club.
187. Hess, J. B. K. S. Macklin, **W. J. Pacheco**, and J. J. Giambrone. 2015. Avian influenza – Backyard flocks. Jacksonville, AL.
188. Macklin, K. S., J. B. Hess, D. Conner, and **W. J. Pacheco**. 2015. Poultry industry in Alabama and vertical integration. Ag. Discovery day. Milstead, AL.
189. **Pacheco, W. J.**, and J. Brake. Effect of particle size of major feed ingredients on pellet quality and broiler performance. 2015. DSM Conference. Curitiba, Brazil.
190. **Pacheco, W. J.** 2014. The effect of regrinding DDGS and SBM on pellet quality in swine finishing diets. 30th Swine Nutrition Conference. Carolina Feed Industry Association. Raleigh, NC.

191. **Pacheco, W. J.** Effect of particle grind size of DDGS and SBM on feed manufacturing and broiler performance. 2014. 41st Poultry Nutrition Conference. Carolina Feed Industry Association. Raleigh, NC.