

Aaron B. Norris, Ph.D.

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EDUCATION:

- 2013 B.S. Tarleton State University, Animal Production, Min. Range & Ranch Mgmt.
2015 M.S. Tarleton State University, Ag & Natural Resource Sciences.
2019 Ph.D. Texas A&M University, Agronomy emphasis in Ruminant Nutrition

PROFESSIONAL EXPERIENCE:

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| 2019 – 2020 | Research Assistant, Texas A&M University. |
| 2020 | Postdoctoral Research Associate, University of Nevada, Reno. |
| 2020 – 2022 | Research Assistant Professor, Texas Tech University. |
| 2022 – Present | Assistant Professor, Texas Tech University. |

MEMBERSHIP IN PROFESSIONAL AND HONORARY SOCIETIES:

Professional:

1. American Society of Animal Science; 2013 – Present.
2. American Society of Agronomy; 2013 – Present.
3. Crop Science Society of America; 2013 – Present.
4. Society for Range Management; 2013 – Present.
5. Texas Section of the Society for Range Management; 2020 – Present.

Honorary:

1. Alpha Zeta, Agricultural Professional Society; 2012.

HONORS AND AWARDS:

1. Pathways to the Doctorate Fellowship, Texas A&M University, 2013.
2. Research Spotlight, Texas Section Society for Range Management, August 2021.

AREAS OF EXPERTISE:

agroecosystems, grazing livestock production systems, grazing livestock nutrition, grazinglands management/improvement, forage systems, enteric & excreta greenhouse gas emissions.

PUBLICATIONS:

Book Chapters: total of 3.

1. **Norris, A. B.** and W. B. Smith. 2019. Farming Characteristics and Manure Management of Small Ruminant and Cervid Livestock. ASA Special Publication 67. In: H. M. Waldrip, P. H. Pagliari, and Z. He, editors. Animal Manure: Production, Characteristics, Environmental Concerns and Management. ASA and SSSA, Madison, WI. p. 129-144.
<https://doi.org/10.2134/asaspecpub67.c7>
2. †**Norris, A. B.** 2022. Forages and Hay. In: R. Harp, editor. Introduction to Animal Science Lab Manual. Linus Publication, Ronkonkoma, NY. ISBN 13: 978-1-60797-601-1 ISBN 10: 1-60797-601-3.
3. *Cruz, A, D. K. Saini, D. F. Aviles, **A. B. Norris**, S.V. K. Jagadish. 2024. Sorghum and pearl millet as sustainable alternative forage options for water limited environments: Opportunities and challenges. Advances in Agronomy. Academic Press. ISSN 0065-2113.
<https://doi.org/10.1016/bs.agron.2024.08.001>

Refereed Journals: total of 21.

Published:

1. Crossland, W.L., **A.B. Norris**, L.O. Tedeschi, and T.R. Callaway. 2018. Effects of Active Dry Yeast on Ruminal pH Characteristics and Energy Partitioning of Finishing Steers Under Thermoneutral or Heat-Stressed Environment. J. Anim. Sci. 96:7 2861-2876.
<https://doi.org/10.1093/jas/sky165>
2. **Norris, A.B.**, L.O. Tedeschi, and J.P. Muir. 2019. Assessment of In Situ Techniques to Determine Indigestible Components in the Feed and Feces of Cattle Receiving Supplemental Condensed Tannins. J. Anim. Sci. 97:12 5016-5026
<https://doi.org/10.1093/jas/skz329>.
3. **Norris, A.B.**, L.O. Tedeschi, J.L. Foster, J.P. Muir, W.E. Pinchak, and M.A. Fonseca. 2020. Influence of Quebracho Tannin Extract Fed at Differing Rates Within a High-Roughage Diet on the Apparent Digestibility of Dry Matter and Fiber, Nitrogen Balance, and Fecal Gas Flux. Animal Feed Science and Technology.
<https://doi.org/10.1016/j.anifeedsci.2019.114365>.
4. **Norris, A.B.**, L.O. Tedeschi, J.L. Foster, J.P. Muir, W.E. Pinchak, and K.D. Casey. 2020. Effects of Feeding Different Levels of Quebracho (*Schinopsis balansae*) Extract in a

- High-Roughage Total Mixed Ration on Seasonal Fecal Gas Emissions. *Journal of Environmental Quality*. <https://doi.org/10.1002/jeq2.20110>
5. **Norris, A.B.**, W.L. Crossland, L.O. Tedeschi, J.L. Foster, J.P. Muir, W.E. Pinchak, and M.A. Fonseca. 2020. Inclusion of Quebracho Tannin Extract in a High-Roughage Cattle Diet Alters Digestibility, Nitrogen Balance, and Energy Partitioning. *J. Anim. Sci.* <https://doi.org/10.1093/jas/skaa047>
 6. *Batista, L.F.D., **A.B. Norris**, and L.O. Tedeschi. 2020. Effects of Salts of Branched-Chain Volatile Fatty Acids Protected with Different Combinations of Encapsulation Materials on Gas Production Dynamics when Incubated In Vitro with *Brachiaria brizantha* ‘Marandu’. *Journal of Applied Animal Science*. 36:5 677-687. <https://doi.org/10.15232/aas.2020-02017>
 7. *Adams, J.M., **A.B. Norris**, L.F.D. Batista, M.E. Rivera, and L.O. Tedeschi. 2020. Comparison of In Situ Techniques to Evaluate the Recovery of Indigestible Components and the Accuracy of Digestibility Estimates. *J. Anim. Sci.* 98:10 1-7. <https://doi.org/10.1093/jas/skaa296>
 8. Tedeschi, L.O., J.P. Muir, H.D. Naumann, **A.B. Norris**, C.A. Ramírez-Restrepo, and S.U. Mertens-Talcott. 2021. Nutritional Aspects of Ecologically Relevant Phytochemicals in Ruminant Production. *Front. Vet. Sci.* 8 (155) <https://doi.org/10.3389/fvets.2021.628445>
 9. *Batista, L.F.D., M.E. Rivera, **A.B. Norris**, J.P. Muir, M.A. Fonseca, and L.O. Tedeschi. 2021. The Influence of Extended Supplementation of Quebracho Extract to Beef Steers Consuming a Hay Diet on Digestion, Ruminal, and Blood Parameters. *J. Anim. Sci.* 99:5 <https://doi.org/10.1093/jas/skab074>
 10. Franco, A.M., A.E.M. Silva, F.H. Moura, **A.B. Norris**, K.V.D. Broek, M. Valcheck, A. Mello, and M.A. Fonseca. 2021. Effects of Lipid and Starch Supplementation as Water Intake Mitigation Techniques on Performance and Efficiency of Nursing Holstein Calves. *Translational Animal Science*. <https://doi.org/10.1093/tas/txab103>
 11. *Batista, L.F.D., **A.B. Norris**, J.M. Adams, T.B. Hairgrove, and L.O. Tedeschi. 2021. Technical note: The Comparison of pH and Redox Potential in Different Locations in the Reticulo-Rumen of Growing Beef Steers Supplemented with Different Levels of Quebracho Extract. *J. Anim. Sci.* <https://doi.org/10.1093/jas/skab260>
 12. Moura, F.H., A.M. Franco, C.A. Pena-Bello, E.C. Archilia, I.M. Batalha, A.E.M. Silva, G.M. Moreira, **A.B. Norris**, L.F. Schutz, and M.A. Fonseca. 2022. Sperm DNA 5-methyl cytosine and RNA N6-methyladenosine methylation are differently affected during periods of body weight losses and body weight gain of young and mature breeding bulls. *J. Anim. Sci.* <https://doi.org/10.1093/jas/skab362>
 13. Moura, F.H., M.A. Fonseca, A.M. Franco, E.C. Archilia, I.M. Batalha, C.A. Pena-Bello, A.E.M. Silva, G.M. Moreira, L.F. Schutz, and **A.B. Norris**. 2022. Characterization of body composition and liver epigenetic markers during periods of negative energy balance

- and subsequent compensatory growth in postpubertal beef bulls. *J. Anim. Sci.* <https://doi.org/10.1093/jas/skac047>
14. D'Souza, G.M., **A.B. Norris**, and L.O. Tedeschi. 2022. Technical note: Evaluation of sampling methods for methane concentration from in vitro fermentation, *J. Anim. Sci.* <https://doi.org/10.1093/jas/skac259>
 15. D'Souza, G.M., L.F.D. Batista, **A.B. Norris**, and L.O. Tedeschi. 2022. Effect of live yeast supplementation on energy partitioning and ruminal fermentation characteristics of steers fed a grower-type diet in heat-stress conditions. *J. Anim. Sci.* skac259. <https://doi.org/10.1093/jas/skac259>
 16. †**Norris, A.B.**, M.S. Miller, J.P. Muir, R.M. Harp, and L.A. Kinman. 2023. Winter Dynamics of White-tailed Deer Browse Nutritive Value in the Southern Cross Timbers and Prairies of Texas. *The Southwestern Naturalist*, 67, 1. <https://doi.org/10.1894/0038-4909-67.1.27>
 17. Franco, A. M., A.E.M. Silva, F.H. Moura, **A.B. Norris**, S.B. Roloson, D.E. Gerrard, A. Mello, M.A. Fonseca. 2023. Effects of isoenergetic supplementation as water use mitigation strategy on water footprint and health of nursing bull calves. *Translational Animal Science*. <https://doi.org/10.1093/tas/txad127>
 18. *Harvey, J.G., **A.B. Norris**, J.M. Tomeček, C.E. Cooper-Norris. 2023. Land Use and Activity Patterns of Feral Swine on Rangelands in North Texas. *Rangeland Ecology and Management*, 91; 1-10. <https://doi.org/10.1016/j.rama.2023.07.004>
 19. †*Rainey, S.T., C.E. Cooper-Norris, K.A. Pearson, and **A. B. Norris**. 2025. Effects of Digestion on Germination of Native Grasses of the Southern Great Plains. *Rangeland Ecology and Management*, 98; 568-575. <https://doi.org/10.1016/j.rama.2024.09.009>
 20. †*Aviles, D.F., C.E. Cooper-Norris, W.L. Crossland, S.V.K. Jagadish, and **A.B. Norris**. 2025. Evaluation of Herd Instinct Tags on Cattle Behavior in the Trans-Pecos Region of Texas. *Rangelands*. <https://doi.org/10.1016/j.rala.2024.11.003>
 21. Silva, A.E.M., A.M. Franco, F.H. Moura, **A.B. Norris**, K. Bangert, L. Bezerra, and M.A. Fonseca. 2025. Nutritional carryover effects of the previous plane of nutrition of crossbred Angus steers affects freshwater intake, animal performance, and water and feed efficiency. *Translational Animal Science*.

*Indicates authorship by undergraduate or graduate student.

†Indicates myself as corresponding author.

1. **Norris, A.B.**, D.F. Aviles, C.E. Cooper-Norris, and J. Baize. 2025. Evaluation of Herd Instinct Tags on Cattle Behavior and Spatial Distribution. XII International Rangeland Congress. 2025 June 2 – 6. Adelaide, Australia.
2. Cooper-Norris, C.E., J.G. Harvey, and **A.B. Norris**. 2025. Morphological and Physiological Advantages Observed in a C₃ Grass Invading C₄ Grasslands. XII International Rangeland Congress. 2025 June 2 – 6. Adelaide, Australia.

Abstracts: invited 2; volunteered 71.

Invited:

1. **Norris, A.B.**, L.O. Tedeschi, H.D. Naumann, C.A. Ramirez-Restrepo, and J.P. Muir. 2021. Plant Condensed Tannin Influences on Rumen Methanogenesis and Undegradable Protein [Abstract]. ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT.
<https://scisoc.confex.com/scisoc/2021am/meetingapp.cgi/Paper/133306>
2. **Norris, A.B.**, L.O. Tedeschi, J.L. Foster Malone, C.E. Cooper, and J.P. Muir. 2021. Plant CT Influences on the Soil Environment: Feces, Litter, and Soil [Abstract]. ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT.
<https://scisoc.confex.com/scisoc/2021am/meetingapp.cgi/Paper/135734>

Volunteered:

1. **Norris, A.B.**, M.S. Miller, J.P. Muir, R.M. Harp, and L.A. Kinman. 2016. Autumn and Winter Dynamics of White-Tailed Deer Browse Nutritive Values in the Southern Cross Timbers and Prairies. Proc. 113th Annual Meeting of the Southern Association of Agricultural Scientists. Feb. 5-9. San Antonio, Texas.
<https://scisoc.confex.com/scisoc/2016srb/webprogram/Session15179.html>
2. **Norris, A.B.**, M.S. Miller, J.P. Muir, R.M. Harp, and L.A. Kinman. 2016. Autumn and Winter Dynamics of White-Tailed Deer Browse Nutritive Values in the Southern Cross Timbers and Prairies. Proc. 69th Annual Meeting of the Society for Range Management. Jan. 31- Feb. 4. Corpus Christi, Texas.
3. **Norris, A.B.**, M.S. Miller, J.P. Muir, R.M. Harp, and L.A. Kinman. 2016. Autumn and Winter Dynamics of White-Tailed Deer Browse Nutritive Values in the Southern Cross Timbers and Prairies. Proc. 70th Southern Pastures and Forage Crop Improvement Conference. May 2-4. West Monroe, LA.
4. Smith, W.B., **A.B. Norris**, F.M. Rouquette, and L.O. Tedeschi. 2016. Development of a Conceptual Model for Integration of the Forage-Animal Interface as a Foundation for Decision Support Systems. J. Anim. Sci. Volume 95, Issue suppl_1, December 2016, Page 27, <https://doi.org/10.2527/ssasas2017.055>

5. **Norris, A. B.**, W. L. Crossland, J. L. Foster, J. P. Muir, and L. O. Tedeschi. 2017. 278 Differences in Digestive Kinetics and Methane Production Among Rhizoma Peanut (*Arachis glabrata* Benth.) Cultivars. J. Anim. Sci. 95(Suppl4):138-138. doi:10.2527/asasann.2017.278
6. Crossland, W. L., **A. B. Norris**, T. R. Callaway, and L. O. Tedeschi. 2017. 565 Effects of Heat Load and Active Dry Yeast Supplementation on Ruminal Parameters. J. Anim. Sci. 95(Suppl4):276-277. doi:10.2527/asasann.2017.565
7. Fonseca, M., W. L. Crossland, **A. B. Norris**, A. K. Almeida, and L. O. Tedeschi. 2017. 576 The Potential Benefit of Corn Dried Distillers' Grain (Co)Products (DDG) Fed Alone or in Combination with Ionophore and Condensed Tannin to Mitigate Methane Emission in Cattle. J. Anim. Sci. 95(Suppl4):282-282. doi:10.2527/asasann.2017.576
8. **Norris, A.B.**, L.O. Tedeschi, K.D. Casey, J.C.B. Dubeux, J.L. Foster, J.P. Muir and W.E. Pinchak. 2018. Effects of Feeding Different Levels of Quebracho (*Schinopsis balansae*) Extract in a High-Roughage Total Mixed Ration on Manure Gas Emissions. J. Anim. Sci. 96(Suppl1):19-20. <https://doi.org/10.1093/jas/sky027.037>
9. Crossland, W.L., **A.B. Norris**, C.M. Cagle, L.O. Tedeschi, G.E. Carstens, J.E. Sawyer, T.R. Callaway, O. AlZahal. 2018. 118 Effects of an Active Dry Yeast Supplement on Ruminal pH, Feeding Performance, and Carcass Characteristics of Feedlot Steers. J. Anim. Sci. 96(Suppl1):63. <https://doi.org/10.1093/jas/sky027.118>
10. **Norris, A.B.**, W.L. Crossland, L.O. Tedeschi, J.L. Foster, J.P. Muir, and W.E. Pinchak. 2018. Effect of Differing Rates of Quebracho (*Schinopsis balansae*) Extract Fed in a Limit Fed High Roughage TMR upon Digestibility and Nitrogen Balance. American Society of Animal Science-Canadian Society of Animal Science Annual Meeting, Vancouver, Canada, Jul. 8-12. <https://doi.org/10.1093/jas/sky404.448>
11. **Norris, A.B.**, L.O. Tedeschi, K.D. Casey, J.C.B. Dubeux, J.L. Foster, J.P. Muir, and W.E. Pinchak. 2018. Quebracho (*Schinopsis balansae*) Extract in Beef Cattle Fed High-Roughage Total Mixed Ration Affects Manure Gas Emissions. International Symposium on the Nutrition of Herbivores, Clermont-Ferrand, France, Sept. 2-6.
12. Batista, L.F.D., C.M. Cagle, **A.B. Norris**, M.M. Ferro, and L.O. Tedeschi. 2019. Gas Production Dynamics of Salts of Volatile Organic Acids Incubated with Brachiaria. American Society of Animal Science Southern Section, Oklahoma City, Oklahoma, Jan. 25-29. <https://doi.org/10.1093/jas/skz053.148>
13. *Adams, J.M., **A.B. Norris**, L.F.D. Batista, M.E. Rivera, and L.O. Tedeschi. 2019. Comparison of In Situ Techniques to Evaluate the Recovery of Indigestible Components and the Accuracy of Digestibility Estimates. American Society of Animal Science-Canadian Society of Animal Science Annual Meeting, Austin, Texas, July 8-11. <https://doi.org/10.1093/jas/skz258.517>
14. Batista, L.F.D., **A.B. Norris**, M.E. Rivera, G.M.D'Souza, J.M. Adams, and L.O. Tedeschi. 2019. Effect of Quebracho (*Schinopsis balansae*) Extract Inclusion in a High Roughage

Diet Upon In Situ Digestion. American Society of Animal Science-Canadian Society of Animal Science Annual Meeting, Austin, Texas, July 8-11.

<https://doi.org/10.1093/jas/skz258.796>

15. **Norris, A.B.**, W.L. Crossland, L.O. Tedeschi, J.L. Foster, J.P. Muir, and W.E. Pinchak. 2019. Influence of Quebracho (*Schinopsis balansae*) Tannin Extract Fed at Differing Rates in a High-Roughage Diet on Energy Partitioning in Beef Steers. American Society of Animal Science-Canadian Society of Animal Science Annual Meeting, Austin, Texas, July 8-11. <https://doi.org/10.1093/jas/skz258.780>
16. **Norris, A.B.**, L.O. Tedeschi, J.L. Foster, J.P. Muir, W.E. Pinchak, and K.D. Casey. 2019. Effects of Feeding Different Levels of Quebracho (*Schinopsis balansae*) Extract in a High-Roughage Total Mixed Ration on Seasonal Manure Gas Emissions. American Society of Animal Science-Canadian Society of Animal Science Annual Meeting, Austin, Texas, July 8-11. <https://doi.org/10.1093/jas/skz258.193>
17. *Adams, J.A., **A.B. Norris**, M.E. Rivera, L.F.D. Batista, and L.O. Tedeschi. 2020. 175 The Suitability of Autoclave and Pressure Cooker Washing Methods in Comparison to ANKOM200 to Determine Neutral Detergent Fiber Using Different Feedstuffs and Washing Solutions, Journal of Animal Science, Volume 98, Issue Supplement_2, Page 79, <https://doi.org/10.1093/jas/skz397.186>
18. Batista, L.F.D., M.E. Rivera, **A.B. Norris**, J.A. Adams, R. Cracco, M. Jackson, and L.O. Tedeschi. 2020. 44 Effect of Quebracho (*Schinopsis balansae*) extract inclusion in a high roughage diet upon in vitro gas production, Journal of Animal Science, Volume 98, Issue Supplement_2, Pages 53–54, <https://doi.org/10.1093/jas/skz397.122>
19. D’Souza, G.M., **A.B. Norris**, and L.O. Tedeschi. 2020. 85 Evaluation of methane concentration sampling methods of gas produced from in vitro fermentation, Journal of Animal Science, Volume 98, Issue Supplement_2, Pages 54–55, <https://doi.org/10.1093/jas/skz397.125>
20. Rivera, M.E. **A.B. Norris**, and L.O. Tedeschi. 2020. 157 The effect of sample handling methodology on ruminal redox potential measured in vivo and in vitro, Journal of Animal Science, Volume 98, Issue Supplement_2, Page 54, <https://doi.org/10.1093/jas/skz397.124>
21. Moura, F.H., I.M. Batalha, A.M. Franco, C.A.P. Bello, E.C. Archilia, A.E.M. Silva, G. M. Moreira, **A. B. Norris**, and M. A. Fonseca. 2020. PSVI-19 Evaluation of an automated system for monitoring water intake in group-housed beef cattle, Journal of Animal Science, Volume 98, Issue Supplement_4, Page 432, <https://doi.org/10.1093/jas/skaa278.753>
22. Franco, A.M., **A.B. Norris**, M. A. Fonseca, A.E.M. Silva, and F.H. Moura. 2020. PSVI-10 Effects of lipid and starch supplementation on total water intake of Holstein bull-calves, Journal of Animal Science, Volume 98, Issue Supplement_4, Pages 426–427, <https://doi.org/10.1093/jas/skaa278.743>

23. Silva, A.E.M., **A.B. Norris**, A.M. Franco, F.H. Moura, and M. A. Fonseca. 2020. PSIX-11 In vitro fermentation parameters of defatted hemp samples at different levels of irrigation, *Journal of Animal Science*, Volume 98, Issue Supplement_4, Pages 422–423, <https://doi.org/10.1093/jas/skaa278.736>
24. D’Souza, G.M., **A.B. Norris**, L.F.D. Batista, and L.O. Tedeschi. 2020. PSII-14 Effect of live yeast on greenhouse gas emissions and energy partitioning of growing steers in heat-stress conditions, *Journal of Animal Science*, Volume 98, Issue Supplement_4, Page 407, <https://doi.org/10.1093/jas/skaa278.713>
25. Silva, A.E.M, A.M. Franco, F.H. Moura, K.N. Bangert, **A.B. Norris**, S.B. Roloson, M. Valcheck, and M. A. Fonseca. 2021. PSIX-4 Comparison of water footprint in roughage-fed and grain-fed beef cattle finishing systems, *Journal of Animal Science*, Volume 99, Issue Supplement_3, Pages 443–444, <https://doi.org/10.1093/jas/skab235.791>
26. Franco, A.M., A.E.M. Silva, F.H. Moura, K. Van den Broek, **A.B. Norris**, and M. A. Fonseca. 2021. PSXIII-9 Effects of lipid and starch isoenergetic supplementation as mitigation techniques on water footprint and health of nursing Holstein calves, *Journal of Animal Science*, Volume 99, Issue Supplement_3, November 2021, Pages 462–463, <https://doi.org/10.1093/jas/skab235.821>
27. D’Souza, G.M., **A.B. Norris**, L.F.D. Batista, J. Gill, T.G.G. Nagaraja, and L.O. Tedeschi. 2021. PSX-B-4 Effect of live yeast on the ruminal fermentation characteristics of growing steers in heat-stress conditions, *Journal of Animal Science*, Volume 99, Issue Supplement_3, November 2021, Page 459, <https://doi.org/10.1093/jas/skab235.814>
28. Rivera, M.E., L.F.D. Batista, **A.B. Norris**, G.M. D’Souza, and L.O. Tedeschi. 2021. 288 Inclusion Effects of Quebracho (*Schinopsis Balansae*) Extract and Active Dry Yeast (*Saccharomyces Cerevisiae*) in Beef Cattle Limit-fed a Grower Ration, *Journal of Animal Science*, Volume 99, Issue Supplement_3, November 2021, Page 157, <https://doi.org/10.1093/jas/skab235.289>
29. Batista, L.F.D., **A.B. Norris**, J.M. Adams, and L.O. Tedeschi. 2021. 286 Effects of Supplementation of Quebracho Extract Supplementation on Ruminal pH of Growing Beef Steers, *Journal of Animal Science*, Volume 99, Issue Supplement_3, November 2021, Pages 158–159, <https://doi.org/10.1093/jas/skab235.291>
30. Harvey J, Cooper-Norris C, **Norris A.B.**, Tomecek J. 2022. Monitoring feral swine habitat use and interaction potential across north Texas rangelands. Society for Range Management Annual Meeting. 2021 Feb. 21 – 10. Albuquerque, NM.
31. Cruz, A., Ostmeyer, T. J., **Norris, A. B.**, Sarturi, J., Emendack, Y., Hayes, C., Jagadish, SVK. 2022. Sorghum and Millet As Alternative Forage Options for Water Limited Environments. Proceedings of ASA-CSSA-SSSA annual meeting, Nov. 6-9, Baltimore, MD.
32. Cruz, A., Ostmeyer, T. J., **Norris, A. B.**, Sarturi, J., Emendack, Y., Sanchez, J., Hayes, C., Jagadish, SVK. 2022. Sorghum and Pearl Millet As Sustainable Alternative Forage

Options for Water Limited Environments. Proceedings of ASA-CSSA-SSSA annual meeting, Nov. 6-9, Baltimore, MD.

33. *Braack, A., **A.B. Norris**, C.E. Cooper. 2023. An examination of cotton residue as a potential feed source in the Texas Panhandle. Society for Range Management Annual Meeting, Boise, ID.
34. *Iida, H. S. C.E. Cooper, **A.B. Norris**, M. Barnes, R. Cox 2023. Monitoring species trends across the Texas Tech University Native Rangeland. Society for Range Management Annual Meeting, Boise, ID.
35. Harvey, J., C.E. Cooper, **A.B. Norris**. 2023. Physiological advantages seen in a C3 grass invading C4 grasslands. Society for Range Management Annual Meeting, Boise, ID.
36. Rainey, S.T., B. Richardson, J.G. Harvey, R.E. Bulaclac, C.E. Cooper-Norris, **A.B. Norris**, R.D. Cox. 2023. Utilization of companion crops during native range planting for rehabilitation of croplands. Society for Range Management Annual Meeting. Boise, ID.
37. Aviles, D.F., J. Baize, **A.B. Norris**. 2023. Evaluation of Herd Instinct Tags on Cattle Behavior in The Trans-Pecos Region of Texas. NRM Research Day. Lubbock, TX.
38. Bulaclac, R.E., J. Heivilin, C.E. Cooper-Norris, **A.B. Norris**, S.D. Longing. 2023. Non-Bee Arthropod Site Use During Native Grassland Rehabilitation in the Texas Southern and High Plains. Poster Presentation. NRM Research Day. Lubbock, TX.
39. *Pearson, K.A., S. Rainey, **A.B. Norris**, C.E. Cooper. 2023. A Comparative Analysis of White-tailed Deer Supplementation Regimes for the Southern Cross Timbers and Prairies Region of Texas. NRM Research Day. Lubbock, TX.
40. *Braack, A., **A.B. Norris**, C.E. Cooper. 2023. An analysis of cotton residue as a potential feed source in the Texas Panhandle. NRM Research Day. Lubbock, TX.
41. *Sabin, C., T. Ryan, C.E. Cooper, **A.B. Norris**, C. Portillo Quintero. 2023. Playa Vegetation Mapping at the NRM Rangeland using UAV Imagery and Machine Learning. NRM Research Day. Lubbock, TX.
42. Aviles, D.F., M. Bangari, A. Cruz, K. Jagadish, C.E. Cooper-Norris, **A.B. Norris**. 2023. Evaluating Grazing Potential and Phytochemical Content of Alternative Warm-Season Annual Forage Crops. Davis College Poster Competition. Lubbock, TX.
43. Labay, R.E., K.A. Pearson, S.T. Rainey, **A.B. Norris**, S.D. Longing, C.E. Cooper-Norris. 28 Sept. 2023. Bee Demographics within a Remnant Prairie Site in the Texas High Plains. Poster Presentation. Davis College Poster Competition. Lubbock, TX.
44. Pearson, K.A., S. Rainey, **A.B. Norris**, C.E. Cooper. 2023. A Comparative Analysis of White-tailed Deer Winter Supplementation Regimes for the Southern Cross Timbers and Prairies Region of Texas. Davis College Poster Competition. Lubbock, TX.

45. Rainey, S.T., K.A. Pearson, C.E. Cooper, R.D. Cox, K. Jagadish, J.O. Sarturi, and **A.B. Norris**. 2023. Effects of digestion on germination of native grasses of the Southern Great Plains. Davis College Poster Competition. Lubbock, TX.
46. Kern, C.R., W.L. Crossland, R.R. Rathmann, and **A.B. Norris**. 2023. 128 Effects of Cottonseed Meal Supplementation Strategy to Stocker Calves Grazing Late Season Summer Forage, *Journal of Animal Science*, Volume 101, Issue Supplement_1, May 2023, Pages 86-87, <https://doi.org/10.1093/jas/skad068.102>
47. Kern, C.R., R.R. Rathmann, J.O. Sarturi, **A.B. Norris**, and W.L. Crossland. 2023. PSX-12 Effects of Cottonseed Meal Supplementation on Calf Performance and Forage Utilization Grazing Late Season Summer Forage, *Journal of Animal Science*, Volume 101, Issue Supplement_3, November 2023, Pages 523–524, <https://doi.org/10.1093/jas/skad281.616>
48. Aviles, D.F., A. Cruz, K. Jagadish, **A.B. Norris**. 2023. Grazing Evaluation of Alternative Forage Options for Water Limited Environments. Proceedings of ASA-CSSA-SSSA annual meeting, Oct. 29-Nov. 1, St. Louis, MO.
49. Cruz, A., Bangari, M. P. S., Aviles, D. F., Ostmeyer, T., Hayes, C., **Norris, A. B.**, Jagadish, SVK. 2023. Comparison of Nutritional Value of Summer-Annual Forages Grown Under Field and Greenhouse Conditions. Proceedings of ASA-CSSA-SSSA annual meeting, Oct. 29-Nov. 1, St. Louis, MO.
50. Cruz, A., Bangari, M. P. S., Aviles, D. F., Xu, W., Hayes, C., **Norris, A. B.**, Jagadish, SVK. 2023. Comparative Assessment of Summer-Annuals As Alternative Forage Options Under Water and Nutrient Limited Environments. Proceedings of ASA-CSSA-SSSA annual meeting, Oct. 29-Nov. 1, St. Louis, MO.
51. Labay, R.E., K.A. Pearson, S.T. Rainey, **A.B. Norris**, S.D. Longing, C.E. Cooper-Norris. 2023. Bee Demographics within a Remnant Prairie Site in the Texas High Plains. Oral Presentation. The Texas Section Society for Range Management. Bastrop, TX.
52. Pearson, K.A., S. Rainey, C.E. Cooper, J.O. Sarturi, **A.B. Norris**. 2023. Nutritive Value Dynamics and Strategic Supplementation of White-tailed Deer Browse Species in the Southern Cross Timbers and Prairies of Texas. The Texas Section Society for Range Management. Bastrop, TX.
53. Rainey, S.T., K.A. Pearson, C.E. Cooper-Norris, R.D. Cox, K. Jagadish, J.O. Sarturi, and **A.B. Norris**. 2023. Effects of digestion on germination of native grasses of the Southern Great Plains. The Texas Section Society for Range Management. Bastrop, TX.
54. Aviles, D.F., J. Baize, and **A.B. Norris**. 2024. Evaluation of Herd Instinct Tags on Cattle Behavior in the Trans-Pecos Region of Texas. Society for Range Management Annual Meeting. Reno, NV.

55. Pearson, K.A., S. Rainey, C.E. Cooper, N.M. Cherry, J.O. Sarturi, J.P. Muir, **A.B. Norris**. 2024. Nutritive Value Dynamics and Strategic Supplementation of White-tailed Deer Browse Species in the Southern Cross Timbers and Prairies of Texas. Society for Range Management Annual Meeting. Reno, NV.
56. Aviles, D.F., A. Cruz, S.V.K. Jagadish, W.L. Crossland, C.E. Cooper-Norris, and **A.B. Norris**. 2024. Grazing Evaluation of Alternative Annual Forage Options for Water Limited Environments. NRM Research Day. April 24, Lubbock, TX.
57. *Brown, E., D.F. Aviles, A. Cruz, M.P.S. Bangari, C.E. Cooper-Norris, J.O. Sarturi, S.V.K. Jagadish, and **A.B. Norris**. 2024. In vitro Digestibility Analysis of Alternative Forage Options for Water Limited Environments. NRM Research Day. April 24, Lubbock, TX.
58. Pearson, K.A., S. Rainey, C.E. Cooper-Norris, N.M. Cherry, L.J. Heffelfinger, J.O. Sarturi, J.P. Muir, and **A.B. Norris**. 2024. Nutritive Value Dynamics with addition of polyethylene glycol (PEG) of White-tailed Deer Browse Species in the Southern Cross Timbers and Prairies of Texas. NRM Research Day. April 24, Lubbock, TX.
59. *Squire, A.R., K.A. Pearson, and **A.B. Norris**. 2024. Comparative Analysis of the Efficiency of Hindgut Digestion in Equine Specimens in Relation to Feeding Routine. NRM Research Day. April 24, Lubbock, TX.
60. Kern, C.R., W.L. Crossland, **A.B. Norris**, R.R. Rathmann and J.O. Sarturi. 2024. 83 Effects of cottonseed meal supplementation on growth performance of heifers grazing mature summer forage, *Journal of Animal Science*, Volume 102, Issue Supplement_1, March 2024, Pages 28–29, <https://doi.org/10.1093/jas/skae019.032>
61. Aviles, D.F., A. Cruz, S.V.K. Jagadish, W.L. Crossland, C.E. Cooper-Norris, and **A.B. Norris**. 2024. Grazing Evaluation of Alternative Annual Forage Options for Water Limited Environments. Davis College Graduate Student Poster Competition. September 26, Lubbock, TX.
62. Brown, E., D.F. Aviles, W.L. Crossland, C.E. Cooper-Norris, and **A.B. Norris**. 2024. Evaluating the Physical and Morphological Effects of Drought Stress on Sorghum Species. Davis College Graduate Student Poster Competition. September 26, Lubbock, TX.
63. Pearson, K.A., S. Rainey, C.E. Cooper-Norris, N.M. Cherry, L.J. Heffelfinger, J.O. Sarturi, J.P. Muir, and **A.B. Norris**. 2024. Nutritive Value Dynamics of White-tailed Deer Browse Species in the Southern Cross Timbers and Prairies of Texas. Davis College Graduate Student Poster Competition. September 26, Lubbock, TX.
64. Rainey, S. T., **A.B. Norris**, and C.E. Cooper-Norris. 2024. Cover Crop and Seeding Rate Effects on Grassland Establishment. 2024. Davis College Graduate Student Poster Competition. September 26, Lubbock, TX.

65. Pearson, K.A., S. Rainey, C.E. Cooper-Norris, N.M. Cherry, L.J. Heffelfinger, J.O. Sarturi, J.P. Muir, and **A.B. Norris**. 2024. Nutritive Value Dynamics of White-tailed Deer Browse Species in the Southern Cross Timbers and Prairies of Texas. The Texas Section Society for Range Management. Oct. 22 – 24, Victoria, TX.
66. Rainey, S. T., **A.B. Norris**, and C.E. Cooper-Norris. 2024. Influence of Cover Crop and Time on Native Planting Establishment in the Texas High Plains. The Texas Section Society for Range Management. Oct. 22 – 24, Victoria, TX.
67. Aviles, D.F., A. Cruz, S.V.K. Jagadish, W.L. Crossland, C.E. Cooper-Norris, and **A.B. Norris**. 2024. Grazing Evaluation of Alternative Annual Forage Options for Water Limited Environments [Abstract]. ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX. <https://scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/16080>
68. Cruz, A., D.F. Aviles, E. Taylor, S. Perez, **A.B. Norris**, C. Hayes, I. Somayanda, and S.V.K. Jagadish. 2024. A Comparison of Antinutritional Factors in Summer Annual Forages Under Differing Irrigation and Nitrogen Treatments [Abstract]. ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX. <https://scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/161678>
69. Wilson, N., L.C. Slaughter, and **A.B. Norris**. 2024. Beneficial Qualities of Native Legume and Rhizobium Symbiosis in Semi-Arid Agroecosystems [Abstract]. ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX. <https://scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/161056>
70. Bardhan, K., J.E. Lima, M.P.S. Bangari, M.K. Mehla, D.K. Saini, S. Cope, E. Myers, A.B. Norris, and S.V.K. Jagadish. 2024. Temporal Root Growth Dynamics and Phenotypic Plasticity in Cotton Using Planting Geometry As a Proxy for Elevated CO₂ [Abstract]. ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX. <https://scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/161794>
71. Cruz, A., D.F. Aviles, **A.B. Norris**, I. Somayanda, and S.V.K. Jagadish. 2024. Forage Allowance of Prussic Acid Free Sorghum and Pearl Millet in a Continuous Grazing System Under Irrigated and Dryland Conditions [Abstract]. ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX. <https://scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/161697>

Other Publications: total of

1. Tannins Hold Promise as Emission-Reducing Feed Additive. Feed Strategy Magazine. December 2019 issue. (author: Emma Penrod)
2. Feed Additives Reduce Emissions, but Questions Remain. Feed Strategy Magazine. April 2020 issue. (author: Emma Penrod)
3. **Norris, A.B.** and L.O. Tedeschi. 2020. Heat load in tropically adapted cattle. Braford News. Summer issue 34:2 p. 18-19.

4. Pearson, K. A., Rainey, S., Cooper-Norris, C. E., **Norris, A. B.** (2023). Nutritive value dynamics and strategic supplementation of white-tailed deer browse species in the Southern Cross Timbers and Prairies of Texas (December 2023 ed., pp. 32 - 34). New Braunfels, Texas: Texas Wildlife Association.

PRESENTATIONS AND LECTURES:

Presentations: total of 6.

1. May 1, 2023. New Ground in Collegiate Studies. Love the Land podcast, Texas Grazing Land Coalition.
2. September 11, 2023. Forage Sorghum and Millet Grazing. Sorghum Field Day. New Deal Farm, Idalou, TX.
3. September 21, 2023. Virtual Fencing: Applications on Texas Rangelands. Southern Rolling Plains Range Workshop. Gail, TX.
4. January 9, 2024. Virtual Fencing: Pros, Cons, Ins, and Outs. Northern Prairies Grazing Lands Coalition. Jacksboro, TX.
5. February 1, 2024. Virtual Fencing: Applications on Texas Rangelands. Panhandle Wildlife Conference. Lubbock, TX.
6. September 5, 2024. Effect of Sorghum-Cotton Rotation With and Without Cover Crops on Soil Greenhouse Gas Emissions. Sorghum Field Day. New Deal Farm, Idalou, TX.
7. October 10, 2024. Use of Virtual Fencing for the Conservation of Grassland Diversity. XIII International Congress on Grassland Management. Texcoco, Mexico.

Guest Lectures: total of 17.

1. March 10, 2022. “Stocking Rates and Carrying Capacity”. NRM 4303: Rangeland and Wildlife Analysis and Management Planning. Texas Tech University, Lubbock, TX.
2. April 17, 2022. “Weed Management and Decision Support Tool”. NRM 4303: Rangeland and Wildlife Analysis and Management Planning. Texas Tech University, Lubbock, TX.
3. October 11, 2022. “Forage Ecology”. Virtual Lecture – Mississippi State University ADS 8533: Beef Production Systems.
4. October 18, 2022. “Grazing Management and Stocking Rate”. Virtual Lecture – Mississippi State University ADS 8533: Beef Production Systems.
5. February 28, 2023. “Grazing Management and Stocking Rates”. NRM 4303: Rangeland and Wildlife Analysis and Management Planning. Texas Tech University, Lubbock, TX.
6. March 23, 2023. “Weed Management and Decision Support Tool”. NRM 4303: Rangeland and Wildlife Analysis and Management Planning. Texas Tech University, Lubbock, TX.
7. April 18, 2023. “Grazing Concepts and Calculations”. PSS 3321/5328: (Adv.) Forage and Pasture Crops. Texas Tech University, Lubbock, TX.
8. April 20, 2023. “Grazing Management and Systems”. PSS 3321/5328: (Adv.) Forage and Pasture Crops. Texas Tech University, Lubbock, TX.

9. April 25, 2023. “Forage Systems for Cow-Calf and Stockers”. PSS 3321/5328: (Adv.) Forage and Pasture Crops. Texas Tech University, Lubbock, TX.
10. April 27, 2023. “Animal Disorders: Forage Toxicities”. PSS 3321/5328: (Adv.) Forage and Pasture Crops. Texas Tech University, Lubbock, TX.
11. April 16, 2024. “Grazing Concepts and Calculations”. PSS 3321/5328: (Adv.) Forage and Pasture Crops. Texas Tech University, Lubbock, TX.
12. April 18, 2024. “Grazing Management and Systems”. PSS 3321/5328: (Adv.) Forage and Pasture Crops. Texas Tech University, Lubbock, TX.
13. April 23, 2024. “Forage Systems for Cow-Calf and Stockers”. PSS 3321/5328: (Adv.) Forage and Pasture Crops. Texas Tech University, Lubbock, TX.
14. April 25, 2024. “Animal Disorders: Forage Toxicities”. PSS 3321/5328: (Adv.) Forage and Pasture Crops. Texas Tech University, Lubbock, TX.
15. April 30, 2024. “Animal Disorders: Forage Toxicities”. PSS 3321/5328: (Adv.) Forage and Pasture Crops. Texas Tech University, Lubbock, TX.
16. May 23, 2024. “Forage Ecology”. Virtual Lecture – Mississippi State University ADS 8533: Beef Production Systems.
17. May 28, 2024. “Grazing Management and Stocking Rate”. Virtual Lecture – Mississippi State University ADS 8533: Beef Production Systems.