

F. M. (MONTE) ROUQUETTE, JR.

Texas A&M University System Regents Fellow and Professor of Forage Physiology
Texas A&M AgriLife Research, Overton; Soil & Crop Sciences Dept.

Education

Ph.D.	Texas A&M University-College Station, Forage Physiology	1967-70
M.S.	Texas Tech University-Lubbock, Forage Cropping Systems	1965-67
B.S.	Texas A&I University-Kingsville, Agronomy	1960-65

Research and Professional Experience

TAMU Regents Fellow, Texas A&M University AREC at Overton	2000
Professor of Forage Physiology, Texas AgriLife Res. & Ext. Center at Overton	1983-present
Associate Professor, TAES, Texas A&M University AREC at Overton	1975-83
Assistant Professor, TAES, Texas A&M University AREC at Overton	1970-75

Program Overview

This research program combines the soil-plant interface of sustainability and environmentally-compatible impacts of nutrient cycling under grazing and stocking conditions with the plant-animal interface that assesses biological components of efficiency of utilization and birth-to-harvest attributes of beef cattle. The pasture-animal research targets utilization strategies of forages in various grazing systems for conception-to-consumption of beef production and has focused on: a) evaluation of forage cultivars for dry matter, nutritive value, persistence, and sustainability for livestock; b) effects of stocking rate, forage species, and fertilization regimens on soil nutrient status, forage stand maintenance, biodiversity of forages, and nutrient cycling in pastures under grazing; c) effects of stocking rates and strategies, stocking methods, and forage utilization systems on forage persistence and cow-calf and stocker performance; d) describing biological efficiencies of pasture systems and project economic implications on lifetime performance of tropically-adapted beef cattle breed types. A birth-to-harvest, archival database **BeefSys** has been developed which includes more than 40 years of pasture-feedlot-animal-carcass datasets, and provides the validation for potential modeling and economic assessments of beef production in the Southeastern US.

Professional Activities:

Professional Societies: American Society of Animal Science (Jan 1979 to present); American Society of Agronomy (1970 to present); Crop Science Society of America; American Society of Range Management (1966 to present); Society of the Sigma Xi; Alpha Zeta; Alpha Tau Alpha; Gamma Sigma Delta

Forage Cultivar Releases and Patents-Collaborative Research: Total = 10

Teaching Experience:

Member or Chairman of 68 Graduate Students at TAMU Anim Sci, Soil & Crop Sci, Range Sci, Ag Econ; Texas Tech Univ; Univ Ark; TAMU-Kingsville

Professional Honors and Awards

American Forage & Grassland Council, **Medallion Award**, 2018
TAMU Kingsville, **Distinguished Alumni Award**, 2017
American Society of Animal Science, Southern Section **Distinguished Service Award**, 2010
FELLOW, Crop Science Society of America, 2010
Overton-New London Chamber of Commerce, Outstanding Citizen, 2009
TAMU Vice Chancellor's AIE - TCE Team Award (**Novice Grazing Workshop**), 2004
Agronomy Journal, Editor's Citation for Excellence in Manuscript Review, 2003
TAMU Vice Chancellor's AIE for Team Research (**Beef Supplementation Team**), 2002
TAMU Vice Chancellor's AIE for Team Research (**Forage Ryegrass**), 2000
TAMU System Award – **REGENTS FELLOW**, 2000

American Society of Agronomy, Southern Section **Career Award in Research**, 1998
Soil and Crop Sciences Departmental **Award for Research**, 1997
FELLOW, American Society of Agronomy, 1996
TAMU Vice-Chancellor's AIE for **Off Campus Research**, 1996
TAMU Vice-Chancellor's AIE for Team Research (**Forage Legume Team**), 1996
BET (Build East Texas) Award of Excellence in Agricultural Research and Extension, 1990
Texas Forage & Grassland Council, **Public Service Award**, 1984
American Forage & Grassland Council, **Merit Award**, 1982
Honorary Chapter Farmer Degree, Overton FFA, 1976

Synergistic Activities

- Soil nutrient status of pastures has documented carbon sequestration and soil P, N, K, Mg, Ca, and pH dynamics.
- Stocking strategies on overseeded bermudagrass pastures with F-1 (Brahman x Hereford) cows and Simmental-sired calves documents maximum-optimum ADG and gain per acre.
- This is the only project in Texas and perhaps in the US that evaluates component performance of beef cattle from birth through cow-calf and post-weaning stocker-grazing systems to feedlot to carcass attributes to sensory evaluations of meat.
- The use of supplemental protein and/or energy for stockers on bermudagrass and small grain + ryegrass pastures showed optimum biological and economic returns for stocker cattle.
- The birth-to-harvest, archival database **BeefSys**, includes more than 40 years of pasture-feedlot- animal-carcass data with Tropically-adapted breedtypes, and provides the core datasets for potential modeling and economic assessments of beef production in the Southeastern US.

Selected Peer-Reviewed Publications

1. Rouquette, F.M., Jr., W.F. Anderson, K.R. Harris-Shultz, and G.R. Smith. 2011. Stand maintenance and genetic diversity of bermudagrass pastures under different grazing management strategies during a 38-year period. *Crop Sci.* 51:2886-2894.
2. Silveira, M.L., F.M. Rouquette, Jr., V.A. Haby, and G.R. Smith. 2013. Impacts of thirty-seven years of stocking on soil phosphorus distribution in bermudagrass pastures. *Agron J.* 105:922-928.
3. Silveira, M., F.M. Rouquette, Jr., G.R. Smith, H.M.S. DaSilva, and J.C.B. DuBeux, Jr. 2014. Review: Soil fertility principles for warm-season perennial forages and sustainable pasture production. *Forage and Grazinglands*. doi:10.2134/FG-2013-0041-RV.
4. Rouquette, F.M., Jr. 2015. Invited Symposium: Grazing systems research and impact of stocking strategies on pasture-animal production efficiencies. *Crop Sci.* 55:2513-2530.
5. Smith, W.B., T.R. Callaway, L.O. Tedeschi, F.M. Rouquette, Jr., T. Sheridan and J. Adamski. 2016. Prebiotic and probiotic approaches to improving food safety on the farm and their implications to human health. In V. Rao and L.G. Rao (eds.). *Prebiotics and probiotics in human nutrition and health*. InTech Open Publishing, Rijeka, Croatia. doi: 10.5772/63114.
6. Wiley, L.M., L.O. Tedeschi, T.D.A. Forbes, and F.M. Rouquette, Jr. 2016. Relationships between restricted residual feed intake of Brahman bulls measured in confinement and under different stocking intensities on Coastal bermudagrass pastures. *Prof. Anim. Sci.* 32:605-618. doi:10.15232/pas.2015-01476
7. Silveira, M.L., F.M. Rouquette, Jr., V.A. Haby, and G.R. Smith. 2016. Effects of thirty-seven years of stocking and fertility regimens on soil chemical properties in bermudagrass pastures. *Agronomy Journal* doi:10.2134/agronj2015.0409.
8. Rouquette, Jr., F.M. 2016. Invited Symposium: The roles of forage management, forage quality, and forage allowance in grazing research. *Prof. Anim. Sci.* 32:10-18. doi: 10.15232/pas.2015-01408.

9. Corriher-Olson, V., M. Rouquette, G. R. Smith, and V. A. Haby. 2016. Persistence of Alfalfa Sod-Seeded into Bermudagrass Pastures on Coastal Plain Soils. *Crop, Forage & Turfgrass Management* 2. doi:10.2134/cftm2014.0096.
10. Rouquette, Jr., F. M. 2017. Invited Review: Management strategies for sustainable, intensive cow-calf production in southeaster US: Bermudagrass pastures overseeded with cool-season annual grasses and legumes. *Prof. Anim. Sci.* 33:297-309. doi: 10.15232/pas.2016-01591.
11. DeMillo, A., M. Rouquette, Jr., U. Mueller, and K. Kellner. 2017. Ant Symbiosis: Effects of substrate, ant and fungal species on plant fiber degradation in a fungus-gardening. *J. Insect Phy.* 98:301-308. doi: 10.1016/j.jinsphys.2017.02.001.
12. Smith, W. B., J. L. Foster, K. C. McCuiston, L. O. Tedeschi, and F. M. Rouquette, Jr. 2017. In situ degradation patterns of Tifton 85 bermudagrass as affected by season and rates of dried distillers' grains with solubles. *Crop Sci.* 57:1-11.
13. Woolfolk, M. R., J. O. Sanders, F. M. Rouquette, Jr., R. D. Randel, and D. G. Riley. 2017. Genetic evaluation of post-weaning performance traits in Brahman and Brahman influenced stockers grazing ryegrass or bermudagrass pastures. *Prof. Anim. Sci.* 33:334-341.
14. Woli, P., F.M. Rouquette, Jr., C.R. Long, P. Gowda, and D.N.L. Pequeno. 2017. Simulated bermudagrass production and nitrate leaching affected by El Nino-Southern oscillation, soil, and clipping frequency. *Agron. J.* 109:1-13. doi: 10.2134/agronj2017.05.0268.
15. Scaglia, G., P. Beck, D. Lalman, and F. M. Rouquette, Jr. 2017. Invited Review: Issues affecting research and extension programs on cow-calf and stocker cattle production in the Southeast region. *Prof. Anim. Sci.* 33:310-319.
16. Rouquette, M. and Maria L. Silveira. 2017. Stocking Rate and Fertilization Influence Sustainability of Bermudagrass Pasture. *Better Crops with Plant Food* 101:6-9. International Plant Nutrition Institute. GA.
17. Rouquette, Jr, Francis M., Edzard van Santen, and Gerald R. Smith. 2018. Long-term forage and cow-calf relationships for bermudagrass overseeded with arrowleaf clover or annual ryegrass managed at different stocking rates. *Crop Sci.* 58:1426-1439.
18. Clark B. Neely, F. Monte Rouquette, Jr., Cristine L. Morgan, Gerald R. Smith, Frank M. Hons, and William L. Rooney. 2108. Integrating Legumes as Cover Crops and Intercrops into Grain Sorghum Production Systems. *Agron. J.* 110:1-16
19. Mullenix, M. K. and F. M. Rouquette, Jr. 2018. Invited Review: Cool-season annual grasses or grass-clover management options for extending the fall-winter-early spring grazing for beef cattle. *Prof Anim Sci* 34:231-239.
20. Woli, P., F. M. Rouquette Jr., G. R. Smith, C. R. Long, L. R. Nelson. 2019. Simulating Winter Wheat Forage Production in the Southern United States using a Forage Wheat Model. *Agron J.* 111:1-14.
21. Woli, P., F.M. Rouquette, Jr, C.R. Long. 2019. Investigating DSSAT: Bermudagrass response to nitrogen as influenced by soil and climate. *Agron J.* 111:1-11. doi:10.2134/agronj2018.12.07
22. Lowry, D.B., T.E. Juenger, et al, F.M. Rouquette, Jr. 2019. QTL x environment interactions underlie adaptive divergence in switchgrass across a large latitudinal gradient. *PNAS*. www.pnas.org/cgi/doi/10.1073/pnas.1821543116
23. Rouquette, Monte, Jr. and Glen E. Aiken. 2019. Management strategies for sustainable cattle production in Southern pastures. P 352. *In: Monte Rouquette, Jr. and Glen E. Aiken (Ed). Elsevier. ISBN: 978-0-12-814474-9. 50 Hampshire St., Cambridge, MA.*