

Project/Activity Number: SERA41

Project/Activity Title: Beef Cattle Production Utilizing Forages in the Southeast to Integrate Research and Extension Programs Across State Boundaries: Development of Replacement Heifers.

Period Covered: 01/27/2019 thru 01/26/2020

Date of this Report: 02/19/2020

Annual Meeting Dates: 01/27/2019 and 01/26/2020

Participants:

Daniel Rivera	jdr398@msstate.edu
Robert Wells	rswells@noble.org
Ryon Walker	rskwalker@noble.org
Shane Gadberry	sgadberry@uaex.edu
Paul Beck	pbeck@uaex.edu
Leanne Dillard	dillasa@auburn.edu
Matt Hersom	mhersom@clermson.edu
Justin Rhinehart	jrhinehart@utk.edu
Neal Schrick	fschrick@utk.edu
Jennifer Tucker	jjtucker@uga.edu
Kim Mullenix	mullmk@auburn.edu
Lawton Stewart	lawtons@uga.edu
Matt Poore	matt_poore@ncsu.edu
Joe Vendramini	jv@ufl.edu
Jason Smith	Jason.smith@ag.tamu.edu
Deidre Harmon	ddharmon@ncsu.edu
Nicolas DiLorenzo	ndilorenzo@ufl.edu

Summary of Annual Meeting:

The SERA041 Annual Meeting met at the ASAS Southern Section Meeting in Chattanooga, TN on January 26, 2020 at 4:00 pm.

Introductions: The meeting began with introductions of attendees followed by recognition of the executive committee and administrative advisors for the SERA-41 group. The executive committee is as follows: Daniel Rivera (Miss State; outgoing chair), Kim Mullenix (Auburn; incoming chair), Jennifer Tucker (UGA; secretary).

Review of the Minutes: Minutes from the 2019 business meeting were reviewed and Lawton Stewart made a motion to accept the minutes as written, seconded by Matt Poore. Motion passed unanimously.

Discussion of 2020 SERA 41 Symposium: The 2020 symposium was well received. ARPAS encouraged submission of papers from the Kunkle and SERA groups from the symposium. Lawton Stewart asked if this would be possible for the 2020 symposium as well as future years. The group discussed the issue of page charges and pursuing a reduced rate/request within a specific journal to fulfill this need.

SERA-41 Renewal: The SERA 041 Project renewal “Improving Production Efficiency of the Beef Cow Herd in Southeastern Forage-Based” was submitted in July 2019 and approved. Participants in the project must re-enroll in NIMMS to be listed as an official participant in the project at their respective institution. The next renewal will be in 5 years.

Administrative Update: Mark McCann (UGA) and David White (UT) were not in attendance, however Neal Shrick (UT) addressed the group on their behalf. He advised the group that he will be meeting with the department heads in a zoom meeting on Feb. 3 to present a report of the activities of the group. Suggestion was made that the group work better to highlight the activities and success of the group including the applied research and SERA41 and Kunkle symposia. Maybe it's time for these events to be nominated for a multi-state project award.

New Business:

Discussion spurred from the SERA-41 symposium that suggested that the NRC book values might need to be re-evaluated with a database to ensure accuracy of recommendations. Paul Beck suggested a collaborative year-round forage/nutrition calendar by region and boundary based on nutrient status and timely analysis across the year to correct and/or determine energy assessments. Discussion ensued about the need for this assessment including the extreme amount of work involved in weekly forage collection and analysis, how do we identify what forage(s) should be evaluated in relation to supplementation, how do we determine when analysis is needed (i.e. we have data from high productive seasons but not year round), do we need to be testing “dormant” forage that producers shouldn't be relying on as their nutrition source for a year round picture, etc. Additional questions/suggestions: if we don't know the prior management what can we actually infer from the data? Has this area been litter amended, commercial fertilizer, or not at all? Can we acquire soil samples and time stamps to determine history of pasture area?

Lawton Stewart suggest assigning a point person or group to plan and implement a project in relation to this discussion and find granting opportunities to fund it. Neal Shrick suggested contacting David White to help identify potential funding areas. Jason Smith volunteered to head up the project. Suggestions have been made to (1) work with regional and commercial forage and soil testing labs to access their databases to use for the development of our grain and forage baselines, (2) compile what current data we have within our own respective states/research programs and determine what holes exist, and (3) team up with soil conservations and look at this data in relation to a GIS system to get pasture history. Ultimately the goal would be to build a database that we can use within region/boundary for ration development.

SERA-41 Business Meeting Attendance: Due to the addition of a 3-minute thesis graduate student competition that occurs during the same time as the SERA-41 symposium and business meeting, Daniel Rivera posed the question should we move the business meeting to a different time? Many of the members and regular attendees of the SERA-41 business meeting are supporting students who are participating in the graduate student competition and no longer staying for the meeting. The group

agreed that if we want to attract more research people to the group we can't compete with the graduate student competition.

Ryon Walker suggested moving the business meeting and/or symposium to Sunday evening with sponsored food. It was determined that this would conflict with the timing of the Southern Section ASAS Directors meeting which currently includes two of our active members. Matt Poore suggested keeping the symposium from 1:00-4:00 but moving the business meeting to 10:00am -12:00pm prior to lunch on Sunday. Lawton Stewart made a motion to move the business meeting to late morning (10-12) before the symposium, Matt Hersom seconded. Motion passed successfully.

Election of Incoming Officer: Deidre Harmon (NCSU) and Leanne Dillard (AU) were nominated for the position of incoming secretary for the group. Leanne Dillard was elected and will serve in this roll.

2021 Kunkle and SERA41 Symposium Discussion: Multiple suggestions were made for the 2021 symposia in Raleigh, NC. Topics suggested included (1) determining difference in estimated forage and feed reports across the states, the variability of energy and feed stuffs, variability among testing sites and labs, including alternative feed stuffs (i.e crop residues, poultry litter, and gin trash). (2) By product feeds – where are we at? What new information is out there? What are the economics related? It's time for a publication update with new guidelines for some of these byproducts. (3) Its time for another forage-livestock systems symposium, suggested topics could include winter grazing systems, annual forage systems, mixed grass legume systems. Including the implications from the ground up (soil health to animal health). Also suggested to have a producer panel. Matt Poore suggested that there would be an increased opportunity for sponsorships if we held a forage-livestock symposium in North Carolina due to support in the region.

Announcements: There was a call for announcements and attendees listed several academic positions and extension events that will be open soon. Lawton Stewart made a motion to adjourn, seconded by Matt Poore. The motion passed successfully.

Accomplishments: The following activities represent multi-state Extension and research programs associated with SERA 041 participants.

Alliance for Grassland Renewal Novel Fescue Workshops.

Extension. The goal of the Alliance for Grassland Renewal is to promote the adoption of Novel Endophyte Tall Fescue technology where it is appropriate. This technology has been proven by many years of research but adoption has been slow. This group, initially formed by U. MO Extension teams academic institutions, industry partners, non-profits and the USDA to create a clear and simple message, and to provide a uniform approach to education on the topic.

Key participants. Craig Roberts (MO), Ray Smith (KY), Matt Poore (NC), Dennis Hancock (GA), John Andrae (SC), Gabe Pent (VA), Tony Stratton (Ag Research USA). Each state conducting a workshop has multiple faculty involved in the development and delivery of the program. Cooperators. University of Missouri, University of Kentucky, North Carolina State University, University of Georgia, Clemson University, Virginia Tech, Ag Research USA, Noble Research Institute, Forage and Grassland Foundation, Inc., USDA-NRCS, KY, NC, and VA Forage and Grassland Councils, Dow AgroSciences, DLF seeds, Pennington Seeds, Barenbrug Seeds, Mountain View Seeds. The Alliance held one-day workshops in Virginia, North Carolina, South Carolina, Georgia, Missouri and Kentucky in 2019. These workshops all attracted good audiences and over 200 farmers and their advisors received the most current

information on renovation of pastures to Novel Endophyte Tall Fescue. In 2020 workshops are planned for Virginia, North Carolina, Georgia, Tennessee, Kentucky, Arkansas, and Missouri.

Tri-State Beef Conference. This conference is a joint effort between the University of Tennessee, Virginia Cooperative Extension, and North Carolina Cooperative Extension. In 2019 the conference was held in Blountville, TN and the program focused on forages, health and reproductive management. The 2019 tri-state beef conference had close to 250 attendees (150 producers, 30 Extension personnel/speakers, 70 trade show participants). Total cattle numbers by attendees included 4,930 brood cows and replacement heifers, 3,185 background/stocker calves and 802 finishing calves. The attendees indicated that the total economic impact of the conference was around \$139,650. Participants came from TN, VA, NC and PA.

Alfalfa in the South Workshop Series. The 'Alfalfa in the South' workshop series is designed to provide in-depth Extension education to innovative early adopter producers to increase awareness, knowledge, and production acreage in the South. One-day workshops were developed and repeated in five locations across Alabama and Georgia in 2018-2019 through collaboration between University of Georgia Extension, Alabama Extension, UF/IFAS Extension, and America's Alfalfa®. These workshops included a half-day classroom session with focused learning modules, and an afternoon field visit to provide real-time discussion with producer collaborators and shared experiences among attendees. Evaluations determined that attendees improved their knowledge base and 88% of survey respondents were likely to implement changes in their operation using alfalfa in the coming year as a result of attending this program.

Multi-State Integrated Research-Extension Initiative on Incorporating Alfalfa into Bermudagrass in the Southeast. A multi-state (GA, AL, and FL) alfalfa-bermudagrass clipping trial was established in fall 2017 to evaluate clipping frequency and intensity effects on mixed stands. The purpose of the study is to provide target height and rest periods for future grazing research trials, and to better understand the effects of these harvest targets on forage production and persistence of alfalfa in bermudagrass systems. Treatments included harvesting alfalfa-bermudagrass mixtures at 2-, 4-, or 6-inch clipping heights, and a 2-, 4-, or 6-inch harvest frequency. 'Bulldog 505' alfalfa was established into 'Tifton 44' and 'Russell' bermudagrass in Crossville, AL and Watkinsville, GA, respectively. In the southern half of these states, 'Bulldog 805' was planted into 'Tifton 85' bermudagrass. When mixed stands were harvested every 4 weeks to a 4-inch height, average yield was between 5,000 to 7,500 lb DM/acre for the season, which is reflective of yield potential observed for a first-year mixed stand (Hendrick et al., in review). When clipped at heights of 2-inches, alfalfa presence decreased dramatically, and less than 10% alfalfa contribution was observed in stands by mid-to-late summer. Forage mixtures harvested at a 6-inch height had decreased yield potential relative to the 4-inch height. This may be in part due to shading and competition effects of residual forage dry matter remaining post-harvest. The 6-week rest period between harvests had decreased nutritive value characteristics compared with those harvested at 2- or 4-weeks. At this harvest frequency, alfalfa had generally begun to bloom, which supports a decrease in forage nutritive value with increasing forage maturity. A second year of data collection was conducted in 2019 to further determine the effects of these harvest management strategies on persistence of alfalfa in bermudagrass systems. Current research efforts and on-going on-farm demonstrations in the Southeast with alfalfa-bermudagrass systems have allowed us to update and refine our Extension recommendations for successful establishment and management of mixed systems in the region. Alfalfa requires a high-level of management and starting with the right site and conditions for establishment are critical for success. Several resources (Table 1) have been developed in the last

decade to help answer stakeholder questions for those who may be considering the integration of alfalfa into their production system. These resources are housed on www.secattleadvisor.com.

ASAS Southern Section Regional Webinar Series for Extension Agent Training on Beef Cattle Reproduction. Led by J.D. Rhinehart (Univ. TN) and Victor Mercadante (Virginia Tech). Multi-state collaboration among Extension educators can successfully increase the reach of research-based educational information through online lecture-based programming. Extension specialists from the American Society of Animal Science Southern Section Extension committee developed a webinar series to provide timely livestock and forage management information and in-service training to Extension agents within the Southeast. Eight webinars were organized and delivered through Zoom across the southeastern region. Webinars were recorded and archived in an online course platform through the University of Arkansas to provide a platform for Extension agents to review content and receive continuing education credits. Lectures were presented by Extension specialists at land-grant institutions in Tennessee, Arkansas, Virginia, Texas, and North Carolina. Participants pre-registered for each webinar using a university-affiliated email address. Results suggest that webinars are an effective in-service training method for providing timely updates on livestock management topics for agents in the region. These webinars are being archived in an online course available through the University of Arkansas that will allow regional access of recordings for Extension agents to receive in-service training credits. The online course log in platform can be found at: <https://courses.uaex.edu/course/index.php?categoryid=77>.

Southeastern Hay Contest. The Southeast (SE) Hay Contest was started by a group of Extension agents and specialists from across the Southeast region (GA, FL, SC, and AL as primary participants) with the objective of increasing producer knowledge of the relative forage quality (RFQ) index. This program is held annually at the Sunbelt Ag Expo in Moultrie, GA, and was designed to provide recognition for high-quality forage production among hay growers in the region. Since its inception, the program has grown to over 350 hay and baleage samples annually. Forage samples were categorized into warm-season perennial grass hay, alfalfa hay, perennial peanut hay, cool-season perennial grass hay, mixed annual grass, or other hay, grass baleage, and legume baleage. Samples were analyzed for RFQ and crude protein (CP) using near infrared reflectance spectroscopy (NIRS) at the UGA Forage Testing Center (Athens, GA). Recently, an analysis was conducted to evaluate trends in forage quality over the last decade. Alfalfa hay had the greatest RFQ, followed by legume baleage (199 and 186, respectively). Perennial peanut and grass baleage had median RFQ values (169 and 150, respectively), and warm-season perennial grass hay had the least (117). With the exception of 2017, the 2013 to 2018 had the greatest RFQ (165). 2017 had a greater amount of rain than average, likely resulting in its lower average RFQ. Alfalfa hay had the greatest crude protein of all categories (23.9%). Crude protein concentrations did not differ among warm-season perennial grass hay, cool-season perennial grass hay, or other hay (mean 14.5%). While these forage samples were likely greater quality than samples not submitted, we conclude that outreach efforts, including the SE Hay Contest, have increased knowledge of the hay and baleage production process leading to increased hay quality from 2009 to 2018. Industry support of this program has grown in the last five years, and each award place class is sponsored by forage equipment, seed, management, or commodity organizations, which illustrates the growth of this program and collaboration among producers, university Extension-research personnel, and private companies.