**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**: 01/27/2022 thru 01/24/2023.

**Date of this Report**: 03/24/2023

**Annual Meeting Dates**: 01/22/2023

**Participants**:

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**Summary of Annual Meeting:**

The SERA041 Annual Meeting met at the ASAS Southern Section Meeting in Raleigh, NC on January 22, 2023 at 2:30 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: Jennifer Tucker (University of Georgia; outgoing chair), Leanne Dillard (Auburn; chair), Nicolas DiLorenzo (University of Florida; Vice-chair), Pedro Fontes (University of Georgia; Secretary).

**Review of the Minutes:** Minutes from the 2022 business meeting were reviewed and Nicolas DiLorenzo made a motion to accept the minutes as written, seconded by Matt Hersom. Motion passed unanimously.

**Discussion of 2024 SERA 41 and Kunkle Symposium:** A discussion about topics for next year’s symposiums took place and the group did not reach a consensus about the topics. The group decided to further discuss potential topics via email. Group decided to focus on speakers from Southern states that do not regularly attend the ASAS Southern Section meeting in order. One of the goals is to increase the number of faculty members attending the meeting. Leanne Dillard reminded the group that a topic must be chosen by June 2023.

**Administrative update:** Leanne Dillard mentioned that Cliff Lamb will be replacing David White as administrative advisor. Leanne also reminded the group, on behalf of Mark McCain, about the importance of collecting impact data for the programs organized by SERA41.

**New business:** Nicolas DiLorenzo reminded everyone about the Extension breakfast that was held the following day. Additionally, Leanne Dillard reminded the group about the upcoming report which Pedro Fontes (current secretary) will be in charge of completing it. Leanne also reminded the group that the project expires in the next year and the group will have to write a proposal to renew the project.

Leanne Dillard mentioned that we should consider writing a review manuscript for the symposium and emphasized that this has been done in the past. Last time a manuscript was published in this format, Journal of Animal Science required that all symposium presentations were compiled as a single manuscript. Instead, the group decided to write reviews at Applied Animal Science but paid for the page charges. Jason Smith suggested that the group should try to contact Translational Animal Science. The group decided to try to contact Translational Animal Science and move forward with publishing review articles as separate papers. Nicolas DiLorenzo and Leanne Dillard volunteered to lead this effort and following up with Translational Animal Science.

Lawton Stewart recommended that the group should make an effort to record presentations from the SERA 41 Symposium and share that material with county agents. A discussion was held regarding the effectiveness of recording videos of the symposium. No consensus was reached with regards to how to share the outputs of the symposium with county agents.

Matt Hersom moved to adjourn the meeting. Justin Rhinehart seconded it.

The meeting was adjourned.

**Election of Incoming Officer:** Kim Mullenix suggested that Brandon Smith would be a good person to serve as secretary in 2024. Jennifer Tucker moved the nomination to a vote and Kim Mullenix seconded. Brandon Smith as selected as next year’s secretary by the group.

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

**2023 SERA041 Symposium.** The symposium was held on January 22, 2023 during the American Society of Animal Science Southern Section meeting in Raleigh, NC. The symposium focused on challenges to the adoption rate of research proven practices in Southeastern cow-calf herds. Invited speakers and title included:

* Challenges in the Pasture - Matthew Poore
* Challenges in Breeding and Genetics - Vitor R Mercadante
* Challenges in Herd Management – Justin Rhinehart
* Producer Panel – North Carolina cattle producers

**2023 Kunkle Symposium:** The symposium was held on January 23, 2023 during the American Society of Animal Science Southern Section meeting in Raleigh, NC. The symposium focused on emerging technologies in cattle production. Invited speakers and title included:

* Gene editing applications in beef cattle production – Andre Garcia
* Prediction of beef heifer reproductive potential using molecular markers - Paul Dyce
* Use f plant secondary metabolites and impact on beef cattle production – Michael Flythe
* Use of automated technology in dairy cattle reproduction – Ronaldo Cerri

**Tri-State Beef Conference.**  This conference is a joint effort between the University of Tennessee, Virginia Cooperative Extension, and North Carolina Cooperative Extension.  In 2022 the conference was held in Blountville, TN and the program focused on marketing, profitability, and health. The 2022 tri-state beef conference had close to 220 attendees (150 producers, 30 Extension personnel/speakers, 70 trade show participants).  Total cattle numbers by attendees included 3,871 brood cows and replacement heifers, 7,038 background/stocker calves and 112 finishing calves.  The attendees indicated that the total economic impact of the conference was around $183,000.  Participants came from TN, VA, NC and KY.

**ASAS Southern Section Regional Webinar Series for Extension Agent Training on Hot Topics in the Southeast.**

Led by a joint effort between Katie Mason (Univ. TN), Victor Mercadante (Virginia Tech) Ashley Edwards (LSU), and Deidre Harmon (NC State University). Multi-state collaboration among Extension Specialist can successfully increase the reach of train the trainer programming and provide research-based educational information through online lecture-based programming. Extension specialists from the American Society of Animal Science Southern Section Extension committee has continued to develop an annual webinar series to provide timely livestock and forage management information and in-service training to Extension agents within the Southeast. Four webinars were organized and delivered through Zoom across the southeastern region. Webinars were recorded and are currently being 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 industry professionals and Extension specialists at land-grant institutions in Tennessee, Virginia, and Texas. 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 hot topic issues 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>.

**American Forage and Grassland Councils Annual Meeting – Student Mixer.**  This student mixer is a joint effort between extension faculty at Auburn University and North Carolina State University.  In 2022 the first ever student mixer was held in Wichita, KS. The mixer had close to 55 attendees from over 10 universities. The student mixer was created to facilitate the networking opportunities of future contributors to the forage and livestock industry. Participants of the mixer mingled with the board of directors of AFGC before hearing from guest speakers from Corteva and the University of Tennessee. Participants interacted with one another in various Extension Specialist led activities. Overall, participants highly recommended this mixer become an annual event and indicated that having this mixer allowed them to build their network in the industry.

**Mid-South Stocker Conference**

This conference is a joint effort between the University of Tennessee and the University of Kentucky.  In 2022 the conference was held virtually on Feb 23rd, and focused on baleage production, grazing management, and stocker health research. The 2022 MSSC  had 150 attendees (8 panelists/speakers, about 50 Extension personnel, and around 90 producers). Total cattle numbers reported by attendees included 1,387 brood cows and replacement heifers, 3,051 background/stocker calves and 416 finishing calves. The dollar value associated with the information gained at the conference and subsequent changes to management was between $1000 and $5000 per operation (45% respondents).  Pa

**Alfalfa in Bermudagrass Grants**

A multi-state research and Extension grant on alfalfa systems management in the South US is ongoing between the University of Georgia, Auburn University, and the University of Florida. Incorporation of alfalfa (*Medicago sativa*) into bermudagrass pastures improves forage quality and decreases the reliance on synthetic nitrogen fertilizer. There are currently two USDA NIFA Alfalfa and Forage Research Program Grants. A project on systems management strategies for alfalfa-bermudagrass systems is in the completion phase. Previous publications and Extension work was highlighted in the 2020 and 2021 SERA report for this grant. This work led to funding of the current grant which continues to explore applications of ways to better preserve forage products with alfalfa for dry matter and nutrient retention and quantifies nutrient metabolism and cycling potential of alfalfa in forage systems in the region.

**Alfalfa-Bermudagrass Management Guide**

The National Alfalfa and Forage Alliance co-funded the development of an alfalfa-bermudagrass management guide and decision tool calendar. This publication is also funded through the USDA NIFA grants listed above, and was developed by colleagues from Clemson University, Auburn University, University of Georgia, and University of Florida. Author contributors from USDA-ARS were also brought in on the project for subject-matter expertise related to pest management. The resource is available for download at: https://www.alfalfa.org/pdf/AlfalfaBermudagrass-LowRes.pdf. In 2022, distribution of this guide began within each state on the project. Printed copies were provided to forage and livestock-focused Extension agents/teams for distribution at programs within each state.

**Alfalfa in the South Workshops**

In 2022, an Alfalfa in the South Workshop was held in South Carolina and hosted by Clemson University. This is a multi-state, joint Extension effort focused on highlighting current research related to alfalfa applications in the Southeast U.S. and demonstrating uses on producer operations. The program consisted of in-field discussion on establishment, management, and success stories with alfalfa in the South and was hosted at the farm of Reed Edwards. There were 110 attendees present from 5 states in the region. The program rotates among states annually and will be hosted in Alabama in 2023.

**Legumes in the South Booklet**

The Forage and Grassland Foundation funded the development of an Extension booklet resource focused on legume establishment, management, and applications for use in the South U.S in June 2022. The project will provide a hand-held, printed decision guide for use by producers in the region. The project is a collaborative effort among Auburn University, University of Georgia, University of Florida, and Clemson University, and is expected to be released in May 2023.

**SARE training for Extension agents, agriculture professionals and mentor farmers.**

Project “Development of a Forage Establishment and Management Curriculum for Extension Agents and Mentor Farmers” Link: <https://projects.sare.org/sare_project/spdp21-04/>

1. **In-person training** in Columbiana, AL, in April 2022: A 2-day training was held with an audience (n=63) of Extension agents, educators, and professionals associated with agricultural institutions from Alabama, Florida, Georgia, Louisiana, North Carolina, South Carolina, and Tennessee. The first day of the training was designed to be inside the classroom with several talks on a wide variety of topics, and the second day was just hands-on demonstrations on the field. The focus was heavy on providing tools to the educators to replicate content and think outside the box on how to explain complex concepts and deepen their knowledge. We had a roundtable of more experienced agents that shared their experiences with the audience on a variety of subjects, including the development of the program, accessing clientele, and measuring impact. A textbook was developed by a group of Specialists from Clemson University, Auburn University, University of Florida, and University of Georgia. The book is entitled “Concepts and research-based guidelines for forage-livestock systems in the Southeast region” and is available at <https://projects.sare.org/information-product/concepts-and-research-based-guidelines-for-forage-livestock-systems-in-the-southeast-region/>.
2. **Online training** hosted through Zoom with 247 registrants from 14 states in the USA and three countries (Brazil, Africa, India). There were two sessions hosted, one on Feb 7th and another on Feb 9th. The first one focused on professional development aspects and opportunities for Extension agents, and agricultural professionals, while the second discussed integrated pest management for weed control and nutrient management. We had two Specialists and three agents from three land-grant Universities as speakers in these training sessions. The sessions were hosted and moderated by Clemson University, Auburn University, and University of Florida Specialists. Links for each session are presented below, and each session had over 100 participants live in attendance:

[Professional Development for Extension Agents and Agricultural Professionals](https://www.youtube.com/watch?v=TdFoj4TLzaY&t=2s)

[Best Management Practices For Forage Systems - Weed Control and Nutrient Management](https://www.youtube.com/watch?v=NrWKkrDU8U8&t=3369s)

**Publications**

* Burt, J.C., L.L. Baxter, C.G. Prevatt, M.K. Mullenix, R.L. Stewart Jr., and J.J. Tucker. 2022. Improving bermudagrass in the Southeastern United States with alfalfa as an alternative nitrogen source in grazing systems. Grassland Research. <https://doi.org/10.1002/glr2.12038>.
* Chappell, C.N., M.L. Marks, K.M. Mason, L.S. Silva, J.L. Jacobs, M.K. Mullenix, S.L. Dillard, and R.B. Muntifering. 2022. Forage production and persistence characteristics of grazed native warm-season grass mixtures with or without nitrogen fertilizer. Grassland Research. <https://doi.org/10.1002/glr2.12028>.
* Vasco, C., L.S. Silva, J.C. Burt, K. Mason, M.K. Mullenix, C. Prevatt, and J.J. Tucker. Agronomic and structural responses of stockpiled alfalfa-bermudagrass mixtures. Accepted to Crop, Forage, and Turfgrass Science.