

Animal Science & Forages Team Impact Report

► The Animal Science and Forages Extension Team focuses on education related to improving on-farm systems management strategies for forage-livestock resources. Our team strives to improve the livelihood of forage and livestock farmers through direct education on best management practices, communication, and relationship-building with stakeholders. This benefits Alabama communities through stewardship of animal, land, and water resources and improved food security.

Program Summary Highlights

Title: Alabama Forage Focus Program (2018–2022)

Institutional Lead: 1862–Auburn University

Project Leader: Leanne Dillard

Background/Situation/Issue: This program educates stakeholders on sustainable forage management practices. Programs will increase the ability of participants to establish, manage, and sustain a viable forage base for their operation.

Selected Outputs:

Meetings with Stakeholders: 75 meetings on forage management are conducted annually with a total reach of 1,865 contacts (5-year average).

Field Days: Integrated research-Extension demonstrations in partnership with Alabama Agricultural Experiment Station Outlying Units provide opportunities for livestock-forage producers to see management practices in the field and view current research on forage management systems. Three to six field days are held annually at Auburn University research farms. During these field days, attendees view current research projects, learn previous projects' results, and how to implement them on their farm. Field days were held at the Wiregrass Research and Extension Center (REC) in Headland, Tennessee Valley REC in Belle Mina, EV Smith REC in Shorter, and various other producer farms throughout the state.



Hands-On Learning: The Alabama Grazing Academy was started in 2018 as a hands-on meeting to teach stakeholders pasture and hayfield management strategies. Programs are often hosted on private farms or at Auburn University Outlying Research Centers. One to five workshops are held annually. Since 2018, 186 farmers have completed the program. Farmers reported increased knowledge (25 to 60%) in precision soil fertility, forage testing strategies and interpreting results, grazing and weed management, and temporary electric fencing. When asked how likely they would be to adopt concepts from the day's segments, on average, all three topics were rated "somewhat probable." The total economic impact was \$2,167 per farm.

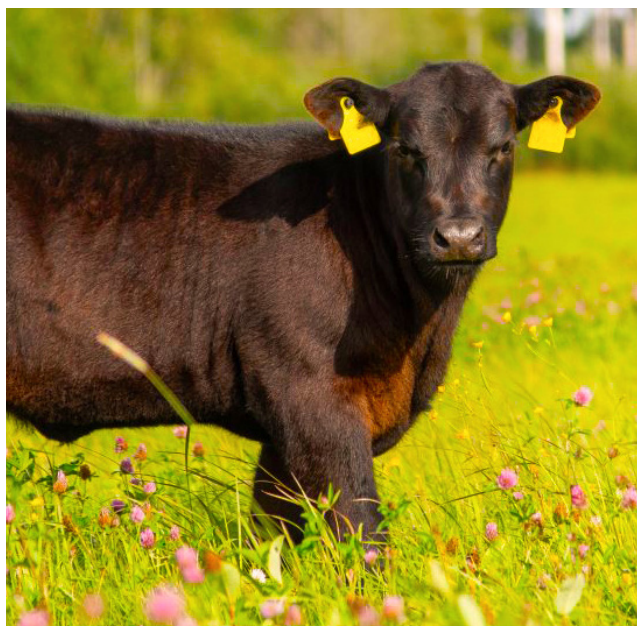
Online Education: In 2021, the Forage Basics Online Course was released as a free, self-paced way for farmers to learn more about forage practices. The course is designed to provide a general overview of key forage management concepts in the southeastern United States. Participants can watch a series of videos, take interactive quizzes, and receive a certificate of completion. The course helps reach participants who are just starting with forage management. It is also a valuable tool for new and beginning farmers, those who want a refresher on specific concepts, and youth interested in agriculture. Since the course was launched, it has attracted 486 enrollments, with 153 participants completing the program.

Evaluation Techniques: Pre- and post-program survey data; one-on-one farmer impact interviews.

Value Statement: The Alabama Forage Focus Program improves local communities through targeted educational efforts on stewardship of soil, plant, and water resources.

Program Resources:

- Forage Basics Online Course: <https://aces.catalog.auburn.edu/>
- Alabama Forages Website: www.alabamaforages.com
- Social Media: www.facebook.com/alabamaforagefocus
- Team E-Newsletter: <https://www.aces.edu/blog/topics/beef/animal-science-and-forage-update/>



Sustainable Livestock Systems Program (2016–2022)

Institutional Lead: 1862–Auburn University

Project Leader: Kim Mullenix

Background/Situation/Issue: The objective of the Sustainable Livestock Production Systems Program is to provide a comprehensive set of programming efforts for livestock producers (beef, dairy, and equine) to teach best management practices to enhance on-farm sustainability.



Selected Outputs:

Meetings with Stakeholders: Average of 85 meetings per year (5-year average)

Educational Resources: Both online and in-print resources were created on sustainable livestock management practices for internal and external stakeholders to address on-farm livestock-forage management questions. These resources include online courses, digital publications, website content updates and additions, webinars, videos, and social media resources. On average, Extension reached 11,650 contacts annually through website visits, online course participation, video views, and social media post reach.

Livestock programs, educational resources, and events are highlighted on the Alabama Extension website and linked to social media for promotion. Interaction on our Facebook page has increased since the onset of the COVID-19 pandemic (26% increase in likes/followers since 2020).

Programs for New and Beginning Farmers: Extension developed an introductory-level educational program for stakeholders interested in learning more about the basics of beef cattle management systems in Alabama. The Beef Systems Short Course was designed (1) to introduce concepts related to best management practices in beef operations to producers and (2) to create awareness among producers about educational services offered through Alabama Extension. Since the program began in the fall of 2019, 276 participants have enrolled in the course across the state, representing 55,634 acres and 29,318 head of cattle reached by this program. Eight topics were taught over four nights (2 topics per meeting, 45 minutes each). Topics include forages; nutrition; herd health; reproduction; animal identification, genetics, and records; environmental stewardship; economics; and meat science. A post-program survey evaluated potential changes in knowledge regarding beef cattle management practices and awareness of Extension resources.

Most participants were part-time farmers (52%). Overall, producers were highly satisfied with the program giving an overall rating of 4.7 out of 5 (Likert-type scale) across program topics, and 75% indicated that they planned to adopt one or more of the management practices discussed in their operation within the next 12 months. Top management practices producers planned to implement included improved forage management (soil/forage testing and grazing management such as rotational stocking; establishing a calving season; record keeping; and proper livestock identification).

A notable outcome of this program is that 48% of participants reported that this was their first time attending an Extension program, demonstrating the reach of this program to new and beginning clientele. The total estimated economic impact of the program is \$728,528 (based on estimated savings reported per operation).

Self-Paced Online Learning: An extensive online course on the basics of beef cattle management was released in January 2016. Since then, 2,055 students have enrolled in the course, with a 22% completion rate. Enrollment is voluntary, and the course generates a certificate of completion for 8 hours of training credit in beef management.

Evaluation Techniques: Pre- and post-program survey data; one-on-one farmer impact interviews.

Value Statement: Improved knowledge and on-farm management strategies increase sustainability of livestock systems in the state, which contributes to a safe and secure food supply chain for consumers.

Program Resources:

- Beef Basics Online Course: <https://aces.catalog.auburn.edu/>
- Alabama Beef Website: www.alabamabeefsystems.com
- Social Media: www.facebook.com/alabamabeefsystemsextension



Beef Cattle Performance Programs to Enhance Profitability (BCIA) (2016–2022)

Institutional Lead: 1862–Auburn University

Project Leader: Michelle Elmore

Background/Situation/Issue: The Alabama beef cattle industry currently represents \$447 million in cash receipts with an inventory of 1.3 million head and ranks third in leading commodities in the state. Based on United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) National Animal Health Monitoring System (NAHMS) data, a low percentage of beef producers in the eastern United States apply best management practices such as a defined calving season, breeding soundness exams, pregnancy diagnosis, record keeping, weaning weight performance, and animal identification, which displays



the need for education. Expansion of record keeping, increased application of genetic selection tools, and recommended management practices would advance operational efficiency and enhance profitability. The Alabama Beef Cattle Improvement Association (BCIA) works with Alabama Extension to promote, educate, and facilitate the use of performance data, record keeping, and marketing opportunities in the beef cattle industry.

Activities with Stakeholders: Average of 46 activities and 3,092 participants per year (7-year average)

Stakeholder Reach: An average of 12,652 contacts per year (7-year average) are reached through the Alabama BCIA website, Facebook page, email blasts and mail, educational focus on production record keeping, genetic tools, and program events.

Selected Outputs:

Alabama BCIA Commercial Record Keeping Program:

The Alabama BCIA Commercial Record Keeping Program uses a specialized, internet-based system for hands-on record-keeping applications. Since 2016, 24,665 calves have been recorded, with an average adjusted weaning weight of 576 pounds and an average of 42 herds per year (7-year average). In 2022, 43 beef herds were enrolled, representing 11,148 animal records, with an average adjusted weaning weight of 591 pounds from 4,115 calves and an average actual weaning weight of 595 pounds from 5,027 total calf records, which is higher than both national and eastern regional previously reported values. Engaged beef cattle operations are recognized annually for their commitment to performance record keeping through awards. To encourage more total herd performance record keeping and recognize herd efficiency, the Alabama BCIA

Performance Advocate Program encompasses six data areas, including breeding, pregnancy percentage, calf adjusted weaning weights and ratios, mature cow weight at weaning for percent of cow weight to calf weaning weight, yearling weights and ratios for replacement heifers, and herd health program treatments. A score of 100 points is given from each data area for a possible perfect score of 600. For 2022, five BCIA herds were awarded a score of 600, two herds a score of 500, and four herds a score of 400.

In 2014, the specialized record-keeping system transitioned from software-based centralized processing to an internet-based system for hands-on use. After five years, beef cattle producers were surveyed in 2019 to assess the application of record keeping to operational management. An online survey of 14 multiple-choice questions was developed to evaluate the application of this new system and its hands-on use. The Qualtrics XM web-based survey tool was used to deliver and evaluate results. A response rate of 44% was reached from 56 beef producers surveyed. The value of performance records rated extremely valuable at 72%, and hands-on access rated very valuable at 92%. Most indicated accessing the system weekly 40%, monthly 20%, or daily 8%. The most common device was a combination of a computer and a smartphone, 36%. The most active record-keeping areas were calving records 21%, weaning data 19%, and culling cows based on performance 17%. Planned expansion was yearling data for replacement heifers 22% and collecting mature cow weights at calf weaning 20%. Overall, 88% of responding cattle producers indicated the internet-based system was meeting their needs 88%.



Seedstock Evaluation and Marketing: Alabama BCIA offers programs for seedstock cattle producers to evaluate and market breeding animals. Alabama BCIA sponsors the North Alabama Bull Evaluation, a feed performance bull evaluation in Cullman, and the Alabama BCIA Fall Round Up Bull Sale, an annual bull consignment sale to market breeding bulls in Uniontown. Within the last seven years, 699 breeding bulls have been marketed by 591 beef cattle producers for a total economic impact of \$2,097,450.00.

BCIA North Alabama Bull Evaluation: The North Alabama Bull Evaluation offers an opportunity for stakeholders to participate in the post-weaning development of bulls for marketing. Consignors enroll bulls in the program and are provided performance evaluation of bulls enrolled in the program. A survey of Alabama BCIA North Alabama Bull Evaluation participants 2019–2021 was conducted. Results reflected the following benefits: (1) 60% of responses rate bull evaluations very valuable; (2) most selected areas of value rated as 17% evaluation provides an opportunity to evaluate herd genetics to performance standards, and 17% evaluation provides an opportunity to market herd genetics; (3) increase in knowledge of performance measurements in yearling weights and ratios 80% and foot scores 79%; and (4) increase in knowledge of genetic selection tools in evaluation of structural correctness and soundness 46%, expected progeny differences (EPDs) 31%, and selection indices 23%. Overall, 86% of respondents stated that their participation was beneficial and planned to participate in the future.

Value Statement: This project supports education of Alabama beef producers to advance the application of best management practices, record keeping, and genetic selection tools to improve operational efficiency and profitability. This, in turn, benefits the economy of Alabama and the production of sale and wholesome beef.

Evaluation Techniques: Marketing program reports; web-based surveys; in-person survey data collection through pre/post program surveys.

Program Resources:

- Website: www.albcia.com
- Social Media: www.facebook.com/alabamabcia



Opportunities for Value— Added Livestock Marketing

Institutional Lead: 1862–Auburn University

Project Leader: Michelle Elmore

Background/Situation/Issue: The Alabama cattle industry ranks third in leading state agricultural commodities, with cattle produced in every county for a total inventory of 1.3 million. Based on USDA APHIS NAHMS data, a low percentage of cattle producers in the eastern United States apply best management practices such as a defined calving season, breeding soundness exams, animal identification, record keeping, and health documentation, and the eastern region trends lower than both national and other regional values. Education and guidance are needed for beef producers to increase their knowledge, application, and expertise in best management practices and value-added marketing options for feeder cattle and breeding animals.

This program aims to increase the knowledge and skills of commercial and seedstock beef cattle producers to make sound genetic selection decisions to enhance herd profitability and marketing.

Selected Outputs:

Demonstration Programs: Alabama Pasture to Rail Program (2016–2022): The Alabama Pasture to Rail Program allows beef producers to learn more about the retained ownership process through the feedyard and harvest phases of the beef industry. The program provides participating beef producers post-weaning performance data, herd health information, and carcass measurements for their herd. The program directive is to provide learning opportunities for producers without requiring individual investment to finish an entire pen or load of calves. Producers can gain knowledge to benchmark their herd to make genetic selections for improvement. The program provides individual animal data to assist producers with management decisions for herd genetics, health, and nutrition. The program directive is to provide learning opportunities about post-weaning traits for producers without the need for individual investment to finish an entire pen or load of calves.



Herdbuilder



REPLACEMENT FEMALE SALE

Since 2016, there have been 4,734 head enrolled in the Pasture to Rail Program. In 2021–2022, the Alabama Pasture to Rail Program had an economic impact of \$775,158 with a range in average profit per head of -\$27.38 to \$214.70. Cattle in the program have averaged a yield grade of 2 with an average quality grade of low Choice, thus demonstrating that these animals meet or exceed industry standards. Participants gained in-depth knowledge in the economics of retained ownership, received full carcass, feed yard, and post-weaning health performance. Many producers have used this program for decades to make genetic improvements within their herds.

Herdbuilder Replacement Female Sale (1998–2022): The Herdbuilder Replacement Female Sale is a marketing program conducted by the Alabama Extension's animal science team and the Alabama Beef Cattle Improvement Association. The sale has two primary goals: to provide high-quality, bred replacement heifers to beef cattle producers and to add value to commercial replacement heifers to enhance profitability.

From 1998 to 2021, the Herdbuilder Replacement Female Sale marketed 7,016 heifers for more than \$10.1 million in economic impact. Bred heifers and a select group of open heifers have been the primary focus of the sale. In 2022, 320 bred heifers marketed averaged \$1,983 per head to impact 58 beef operations directly.

Value Statement: Value-added livestock management and marketing practices to enhance farm and community-based economic sustainability.

Evaluation Techniques: Pre- and post-program survey data.

Food Animal Quality Assurance

Institutional Lead: 1862–Auburn University

Project Leader: Soren Rodning

Background/Situation/Issue: This program aims to provide Beef Quality Assurance and Pork Quality Assurance training and certification for beef and pork producers to facilitate sustainable meat animal production.

Selected Outputs:

Beef Quality Assurance Program: Beef Quality Assurance (BQA) is a nationally coordinated, state-implemented program providing education and training for cattle producers about good animal husbandry and management. BQA aims to help producers raise cattle under the best possible management and environmental conditions. The training is practical and based on scientific knowledge. BQA guidelines are also designed to ensure that beef consumers can trust and have confidence in the beef industry. This is extremely important considering that farm and ranch families comprise less than 2% of the US population, which means many people are unfamiliar with food production. BQA provides a great opportunity for a relatively small number of beef producers to speak with a louder, more unified voice about how and why cattle are raised and managed the way they are. The Alabama Beef Quality Assurance Program is offered throughout the state and trains between 1,000 and 3,000 cattle producers and high school agriscience students every year, typically impacting the management of more than 30,000 head of cows, bulls, and calves, demonstrating the reach and application of this program.

Pork Quality Assurance Plus Program: Pork Quality Assurance Plus (PQA Plus) is a producer-driven program designed to ensure that US pork products are of the highest quality and safe for consumption and that animals raised for food are cared for in a way ensuring their well-being. PQA Plus is designed to identify practices with the potential to result in a food safety hazard and minimize this potential risk through producer education of relevant on-farm practices. On average, the Alabama PQA Plus program maintains certification for more than 100 Alabama pork producers, which is required for most pork producers to be able to market their hogs.

Value Statement: Food animal quality assurance training demonstrates the beef and pork industry's commitment to food safety and quality and improves consumer confidence in meat products.



Testimonials

The following are some selected impact highlights from stakeholders and participants in our programming efforts:

- “Extension people made my forage program a success.”
- “Through the Pasture to Rail program, in particular, Alabama Extension has been a useful resource for me. When I retained ownership on some calves that I sent through the program, I was able to get carcass data that had been collected on them after slaughter. By working with Extension, I was able to select for bulls that had a better marbling score in hopes of their future progeny grading better on the rail. I have also been a part of the Herdbuilder Replacement Female Sale for several years.”
- “*The Alabama Beef Handbook* is one of the single best resources I have seen from Extension in years and is a practical guide for my operation.”
- “Overall, this test (North Alabama Bull Evaluation) has historically been managed well and brought buyers and consignors together at a wonderful sale facility in Cullman, Alabama. Thank you for continuing the program and caring about the continued success of the evaluation.”



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