Marketing Alabama-Grown, Forage-Fed Beef

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J.W. Prevatt, C.R. Kerth, and D. Fields

INTRODUCTION

Cattle producers and slaughter plants in Alabama have faced major disadvantages since the transition from grazing cattle on grass to feeding cattle a grain-based ration to produce grain-finished beef. This transition began during the 1960s when major technological advances began to be realized in grain crop production. These advances significantly increased grain yields thereby lowering real grain prices.

The wide adoption of grain-based rations in animal agriculture resulted in enormous changes in U.S. cattle production systems, market structure, and marketing practices. The local markets for primarily locally produced forage-fed beef were largely eliminated. What followed was a more industrialized model of animal agriculture where large corporate feedlots and packing plants would produce, process, and merchandise beef nationally and internationally. Industrialization, combined with Alabama being a grain-deficit state, substantially diminished the in-state beef production and marketing opportunities available to Alabama cattle producers and slaughter plants. Subsequently, the number of Alabama cattle farms, cattle, and slaughter plants have substantially declined since 1960.

The adoption of the industrialized model of animal agriculture, in which animals are fed grain-based rations in large confined feedlots, has resulted in the purchase and transport of Alabama feeder calves (an intermediate product) to Midwestern wheat pastures, feedlots, and beef packing plants. Unfortunately, the movement of Alabama feeder calves to Midwestern sites usually involves multiple sales transactions. Today, the average Alabama feeder calf is bought and sold five times between birth and slaughter. In addition, the payments for the resources (land, labor, capital, and management) once utilized in Alabama to produce beef have now been transferred to large firms, usually multinational corporations, operating in the Midwestern United States.

While marketing Alabama feeder calves directly to Midwestern feedlots or retaining ownership through the feedlot to the packing plant is possible today for some larger producers, it does incur significant transportation costs for the long distances to these facilities, causes a higher level of animal health problems and death loss, often adversely affects animal performance, and pays for the use of someone else's resources (land, labor, capital, and management) as opposed to those provided by Alabama cattle producers or slaughter plants. Also, a large number of Alabama's smaller cattle producers cannot participate in this marketing opportunity because of less than economic units (50,000 pounds per truckload of same sex, similar weight, uniform quality feeders) for transportation purposes and meeting the desired feedlot pen sizes (50 to 200 head per pen).

The transition to feeding grain-based rations to cattle has meant that the majority of Alabama and Southeastern cattle producers must sell weaned calves to Midwestern cattle producers, feedlots, and beef packing plants at an earlier stage of production. Consequently, Alabama has experienced tremendous reductions in slaughter animal numbers, and correspondingly the number of cattle farms, cattle, and slaughter plants have plummeted.

Recent consumer research has documented an interest in forage-fed beef. A study by Umberger *(6)* has shown that up to 23 percent of consumers surveyed in two metropolitan areas in the United States preferred the taste of Argentine forage-fed beef. Consumers preferring the forage-fed beef in this study indicated they would be willing to pay a premium of $1.36 per pound for Argentine forage-fed beef over the traditional U.S. grain-fed beef.

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In addition, a study by Cox *(1)* has shown that approximately 34 percent of 1,250 consumers surveyed in nine grocery stores in three states (Alabama, Tennessee, and Kentucky) preferred the taste of forage-fed beef. Furthermore, these consumers indicated that they would be willing to pay up to $1.17 per pound more for forage-fed beef, which results in a $0.12 per pound premium for the live animal or about $132 per animal for the cattle producer.

In 2005, Alabama had approximately 24,000 farm operations with beef cattle. During the last five years an average of about 500,000 feeder calves and feeder cattle were transported outside of the state of Alabama to Midwestern wheat grazing pastures, feedlots, and slaughter facilities each year. Thus, each 100,000 head of cattle used in a forage-fed beef production system would generate approximately $18.6 million. If all the feeders that are currently being transported out of state were used in a forage-fed beef production and marketing system, approximately $93 million would be generated for Alabama cattle producers. In addition to these economic benefits received by cattle producers, slaughter plants and the rural communities of Alabama would benefit from additional jobs and revenues. Thus, the potential for development of a forage-fed beef production and marketing system in Alabama should be evaluated.

In 2005, funding was received to evaluate the development of a forage-fed beef production and marketing system. The objectives of this study were as follows:

(1) develop a clear, focused marketing plan that determines the target demographics, preferred language, and specific consumer preferences for forage-fed beef,

(2) identify local packing plants and distributors interested in marketing a forage-fed beef product, and

(3) develop a marketing system for forage-fed beef that takes advantage of current technology to insure a consistent product.

DEVELOP A MARKETING PLAN

Merchandising a New Beef Product

In an effort to learn more about the consumer's understanding and preferences of new beef products, a survey was conducted at the Alabama Grocers Trade Show (Mobile, Alabama). A simple one-page survey questionnaire was developed to collect information on merchandising a new beef product *(4)*.

The first section of the survey addressed the question "What attributes of a new beef product would be preferred by consumers? The twelve meat attributes evaluated included antibiotic free, domestically produced, enhanced conjugated linoleic acid, enhanced omega-3 fatty acids, enhanced vitamin E, humanely produced, allowed farmers to make a living wage, locally grown, no added hormones, produced in an environmentally friendly way, produced by independent farmers, taste, tenderness, and traceable back to the farm. The survey respondents were presented with this list of twelve meat attributes and asked to indicate their expected preference by consumers for each meat attribute (preferred, indifferent, or not preferred).

The weighted average rankings of the 35 respondents were separated into four clusters. The first cluster included meat attributes of tenderness (1.0) and taste (1.03) and were most preferred. These meat attributes have traditionally been highly preferred by consumers. The second cluster included traceable back to the farm (1.17), domestically produced (1.17), no added hormones (1.21), and locally grown (1.21). Each of these meat attributes may imply that consumers want a safe beef product. The third cluster included humanely produced (1.29), produced in an environmentally friendly way (1.29), produced by an independent farmer (1.29), and provides the farmer with a living wage (1.33). These meat attributes appear to be moderately preferred. The fourth cluster included enhanced omega-3 fatty acids (1.40), antibiotic free (1.43), enhanced Vitamin E (1.44), and enhanced conjugated linoleic acid (1.59). Many of the respondents selected either "indifferent" or "not preferred" for the health attributes listed in the fourth cluster. These are the healthy meat attributes associated with beef produced primarily on grass. It is presumed that the majority of the respondents either were not knowledgeable of these health attributes or they were not important to their clientele.

The second section of the questionnaire was designed to determine the consumer's preference for beef production systems. The respondents were asked to rank the beef production systems that they would expect consumers to prefer. Surprisingly, about five out of 35 people ranked grain-fed beef as most preferred. Two people ranked grass-fed beef as most preferred. The majority of the respondents indicated that they were not knowledgeable about how beef was produced. Additionally, almost no one knew the benefits associated with grass-fed beef products. These survey results strongly suggest that a major educational effort would be needed to promote the merits and advantages of grass-fed beef products.

Lastly, respondents were asked to describe the requirements for merchandising a new beef product in their store and any consumer/merchandiser concerns about new beef products. The responses describing the require-

ments for merchandising a new beef product in their store included in-store promotions and samples, store advertising, visibility of product, product packaging, image of product, consistent quality (taste and tenderness), reliable supply, and shelf life. The responses describing any consumer/merchandiser concerns about new beef products included freshness, color, popular cuts, recipes, flavor and palatability, fat content, additives or preservatives, appropriately priced, advertising new product, education of consumers, and food safety.

Forage-Fed Beef Attributes: Consumer Preferences and Willingness-To-Pay

In the past decade, consumers have substantially increased their demand and willingness-to-pay for products that provide additional health benefits. However, there is an extremely limited amount of market-level data available on sales of beef products with health benefits.

This study utilized hypothetical and non-hypothetical conjoint experiments that estimated the demand for individual steak and ground beef attributes, provided beef attribute pricing information, and helped identify the target demographic for alternative beef products *(2)*. A conjoint experiment was constructed where beef products were described by the attributes of whether the animal was forage-fed, whether growth hormones and antibiotics were administered, and whether the meat was traceable back to the farm where raised. The package size (varied between 1 and 2 pounds per package) and price (based on levels of cash offered to respondents) were also evaluated. These attributes were used to develop profiles, which represented beef products that could be selected by a respondent. A total of 515 respondents each ranked nine profiles from most desirable to least desirable.

Survey data were collected via in-person interviews at Bruno's grocery store in Auburn, Alabama (Lee County). Participants were randomly assigned to one of the eight treatments. Treatments varied according to whether (1) individuals completed the conjoint task with beef steaks (ribeye) or ground beef (85 percent lean), (2) the conjoint ranking was real or hypothetical, and (3) information was provided about the health benefits of forage-fed beef.

Sample Characteristics. The survey respondents in this study were relatively young, well-educated, high-income consumers. The average age across all respondents was 44 years, 59 percent had an undergraduate or higher degree, and more than 33 percent had a household income of $80,000 or more. About 60 percent of respondents were female and 81 percent of respondents were White, while 15.5 percent and 3.5 percent were African American and other, respectively. The sample, as a whole, is expected to be more health conscious and have more buying power than the general population.

Most respondents were consistent consumers of beef products with 48 percent and 74 percent indicating that at least once per week they eat steak and ground beef, respectively. Most respondents (60 percent) indicated that they were unsure of whether the grocery store carried beef products that were either traceable back to the farm, produced with no antibiotics or growth hormones, or grazed in pasture.

Results. The study results for the hypothetical experiment (respondents received a chance to receive a $250 cash drawing for completing the survey) indicated the respondents preferred forage-fed ground beef over ground beef without that attribute, ground beef from cattle that were not administered growth hormones or antibiotics over hormone and antibiotic treated cattle, ground beef that was traceable back to the farm versus non-traceable beef, two-pound instead of one-pound packages of ground beef, more cash to less, and having a pound of ground beef to no beef at all. The relative size of the coefficients suggested individuals valued the hormone attribute more than pasture-grazed or traceability attributes, at least in the ground beef, hypothetical, no information treatment. The results also indicated the pasture attribute was less preferred in the steak treatments than in the ground beef treatments. In addition, providing health information also tended to increase preferences for beef with no hormones and antibiotics, but decreased preferences for traceability, at least in the hypothetical experiment.

Moving the decision context to a non-hypothetical setting (respondents received meat and cash for their participation) had a significant influence on several preference parameters, and in particular, results indicated an interaction effect between the non-hypothetical and information treatments, meaning information had differing effects depending on whether individuals' decisions were binding. Providing information about the health benefits of pasture-fed beef increased preferences for beef with that attribute (although less so in the non-hypothetical treatment than in the hypothetical treatments).

When health information was provided for steaks, and the decision task was non-hypothetical, individuals were willing to pay $2.56 more for a forage-fed steak than a non-forage-fed steak. When health information was not provided about the benefits of forage-fed meat, this figure dropped to $1.99. When health information was provided for ground beef in the non-hypothetical setting, consumers were willing to pay $1.99 for forage-fed beef. When no information was provided, willingness-to-pay decreased to $1.70. On average, individuals were willing to pay more for meat without growth hormones or antibiotics than for forage-fed and traceable beef: more than $2.00 more in the steak, non-hypothetical treatments without information. Overall, consumers were less willing to pay for traceability on average than for forage-fed or non-hormone treated beef.

In general, moving from the non-hypothetical decision task to the hypothetical decision task tended to reduce the amount individuals were willing to pay for a given attribute. The total willingness-to-pay for a product with all of these attributes was expected to be considerably lower than the sum of the willingness-to-pay for individual attributes due to the interaction effects.

A market shares analysis was conducted from a number of simulated scenarios based upon responses provided by respondents. The first scenario assumed that a conventional product (not pasture fed, produced with growth hormones and antibiotics, and not traceable) was the only product for sale. If it were the only product for sale, by definition, it would generate almost 100 percent market share. Scenario 2 showed that if both conventional and a forage-fed steak (ground beef) were available for sale at $8.00 per pound ($2.25) and $10.00 per pound ($4.25), respectively, the forage-fed product would pick up about 51 percent of the steak market share whereas it would only garner about 43 percent market share in the ground beef market. In a third scenario, if the price of forage-fed steak (ground beef) was increased to $12.00 per pound ($5.00 per pound) while the conventional price remained unchanged, the forage-fed steak (ground beef) market share would fall from 51 percent (43 percent) to 18 percent (23 percent) as compared to scenario 2. A fourth scenario illustrated that providing information about the benefits of forage-fed beef increased market share of forage-fed steak by about 10 percent (from 51 percent to 61 percent) and forage-fed ground beef about 7 percent (from 43 percent to 50 percent). A fifth scenario showed that a product that was pasture fed, with no growth hormones or antibiotics, and traceable back to the farm at a price of $10.00 per pound ($4.25 per pound for ground beef) would be expected to pick up more than 80 percent market share in both the steak and ground beef markets. Respondents to this survey were not the typical consumer and represented a relatively small segment of the overall population. This analysis also assumed that taste and tenderness were equal across all products.

In general, females had higher utility parameters for forage-fed, no added hormones, and traceability than males. Providing information to the respondents increased their utility for the various beef attributes. Higher income individuals had higher utility parameters for forage-fed, no added hormones, and traceability than low income individuals. Additionally, higher income individuals were less responsive to changes in price than lower income individuals. Relating to size and quantity of beef, females have a lower preference for larger cuts.

The results of this study indicate that there is a demand and willingness-to-pay a premium for products that are forage fed, traceable back to the farm where produced, and produced without antibiotics or growth hormones. Although the survey respondents in this study do not represent the typical consumer in the state, they are likely to be the best demographic to target for marketing alternative, high-valued beef products. This study provides some evidence that developing and marketing alternative beef products has the potential to add to the bottom line of beef producers in the state.

IDENTIFY LOCAL PACKING PLANTS AND DISTRIBUTORS

A Directory of Alabama's Livestock Slaughter and Meat Processing Facilities

A two-page survey was developed to collect information that would help describe Alabama's custom livestock slaughter and processing businesses *(5)*. A listing of custom livestock slaughter and processing businesses was obtained from the Alabama Department of Agriculture and Industries. The survey requested business contact information (corrected name, address, and phone number), the type of inspection status (state or federal inspection), and the maximum weekly capacity of their facility (head of cattle, deer, and hogs per week).

The information obtained from the survey was used to prepare alphabetical and county directories of the custom livestock slaughter and processing businesses in Alabama. The directories were published and disseminated through the Alabama Cooperative Extension System for use by Alabama consumers and livestock producers.

A Study of Alabama's Livestock Slaughter and Meat Processing Businesses

The Alabama livestock slaughter and meat processing businesses have been confronted with a number of major issues during the last 50 years. These businesses typically custom slaughter and process livestock for individuals as well as purchase livestock for resale at wholesale and retail levels.

A twelve-page survey was developed to collect information that would help describe Alabama's livestock slaughter and meat processing businesses *(3)*. The survey provided a detailed description of meat plant operating size, current practices, inspection status, and the capacity of slaughtering and processing businesses in Alabama.

The results of the Alabama livestock slaughter and meat processing business survey revealed some interesting information including the following:

- The majority of respondents were involved in meat processing.
- The largest percent of business income was generated from beef, deer, and pork commodities.

• Forty-three percent of the respondents have been in the meat business more than 30 years.
• Almost one-third (32 percent) of the respondents had built a meat plant after 1999.
• The majority (77 percent) of the respondents were state inspected.
• The size of the meat plant for the majority of the respondents was less than 10,000 square feet.
• The highest use of the meat plants was during November through January.
• The respondents operated their meat plants an average of three days per week and 45 weeks per year for cattle and pork.
• The maximum capacity of slaughter cattle (11.44 per day) for the average meat plant was at least twice the slaughter number on a typical day (5.36 head per day).
• The maximum processing capacity at the average meat plant was at least twice the plant processing on a typical day.
• The average number of employees reported by the respondents was three.
• The average wage of the meat plants' employees ranged between $5.16 and $10 per hour.
• The value of capital assets of the average meat plant was between $50,000 and $249,999.
• The annual gross sales income of the meat plants varied widely from less than $50,000 to more than $10 million per plant.
• The average custom rate to slaughter cattle was $21.11 per head. The average custom rate to cut, wrap, and freeze beef was $0.36 per pound.
• The most common method used to determine custom service charges was cost of production.
• The most common method used to determine price for wholesale and retail meat products was cost of production plus X percent profit.
• Approximately 51 percent of respondents hired a bookkeeper to prepare financial reports.
• More than 30 percent of respondents did not review production costs.
• The most common trading area identified by the respondents was multi-county.
• Approximately one-third of the respondents indicated they plan to expand the plant size, add services, and/or increase plant utilization in the future.
• Almost two-thirds of the respondents were interested in slaughtering and processing grass-finished beef.

This study described the business and physical characteristics associated with 39 of the 88 (44 percent) meat plant businesses in Alabama. The discussions related to specific topics in this report are based solely on the responses received and are not projected for the entire Alabama livestock slaughter and meat processing business.

Farmer Managed Marketing of Livestock Products Workshop

A "Farmer Managed Marketing of Livestock Products" workshop was planned and coordinated for Alabama livestock producers and Extension Livestock Agents interested in better understanding the technical aspects of producing and marketing livestock products. The workshop was held on April 25-26, 2006 at the Auburn University Lambert-Powell Meat Laboratory. The workshop included topics on entrepreneurship, an entrepreneur panel, food safety and labeling, food handling, permits, licenses, and regulations, reality of marketing the whole animal, customer-centered marketing, and business planning and business management.

Approximately 50 people attended the workshop. Attendees included livestock producers, Extension Agents with livestock responsibilities, agribusiness representatives, governmental agency representatives, university researchers, and the speakers. A copy of all handout materials and slides was compiled and distributed to each participant. An evaluation of the workshop was conducted. The evaluation results were very positive and provided encouragement for further programming in this area.

DEVELOP A MARKETING SYSTEM USING CURRENT TECHNOLOGY

Consumer Preferences Associated with Modified Atmosphere Packaging

One of the major advantages of beef from cattle that have been finished on forage is that they have a higher amount of "good" fats such as conjugated linoleic acid and omega-3 fatty acids and have fat that is, in general, more unsaturated. The down side of having more of these types of fatty acids is that they are more susceptible to oxidation resulting in brown meat color and a rancid odor and flavor. Since unsaturated fatty acids are oxidized more easily than saturated fats, technologies that will slow down the oxidation process are essential to maintaining and/or improving shelf life of these raw products.

While numerous anti-oxidant additives can be added to meat to slow the rate of oxidation, there is also a desire to resist adding chemicals of any kind to the meat. New packaging technology allows meat processors to modify the air inside the package to improve the color and taste of raw meat. The most recent advance in modified atmosphere packaging (MAP) is the use of carbon monoxide (CO). In very small amounts, CO is able to improve the color and taste of steaks and chops.

In a consumer survey conducted in a local grocery store, consumers were asked to rate beef steaks (ribeye) that had been packaged in either high oxygen MAP or CO MAP. Consumers scored steaks 27 to 40 percent higher for taste characteristics. Furthermore approximately 85 percent of the consumers preferred the taste of steaks packaged in CO when sampled toward the end of their shelf life (approximately 19 days). Clearly new technologies exist that improve the quality traits of meat that would otherwise incur an expense from having a shorter shelf life.

SWOT Analysis of a Potential Alabama-Grown, Forage-Fed Beef Industry

A SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis provides more understanding of a new business venture. Correctly identifying the strengths, weaknesses, opportunities, and threats will improve management decisions and the chances of business success. The following includes a list of factors believed to be pertinent to an Alabama forage-fed beef business venture.

Strengths

- Domestically produced
- Improved use of local resources (land, labor, capital, and management)
- Increased economic activity within the state of Alabama
- Traceable back to the farm
- Health benefits
  - Lower levels of *E. coli*
  - Less calories
  - Higher levels of omega-3 fatty acids
  - Higher levels of vitamin E
  - Higher levels of conjugated linoleic acid (CLA)
- Humane production system
- Environmentally friendly production system
- No antibiotics
- No added hormones

Weaknesses

- Lack of an established market
- Lack of consumer knowledge about cooking forage-fed beef
- Lack of meat processor knowledge about processing forage-fed beef
- Longer production time than traditional beef finishing (feedlot)
- Lighter carcass weights than traditional beef finishing (feedlot)
- Slightly higher breakeven price per pound than traditional beef finishing (feedlot)
- Limited quantity and quality of forage during summer and fall
- Taste and tenderness of meat effected by forage-finishing on some grasses
- Limited state-wide facilities with appropriate inspection status to harvest finished cattle for shipping the product out-of-state
- Forages lack the nutritional energy and protein of grain feedstuffs
- Forages cannot be as economically stored and transported for later use as compared to concentrate feedstuffs (corn, soybean meal, etc.)
- Forage quality varies widely with growing conditions (vagaries of the weather) and among forage species
- Lower quantity of meat consumed by an aging population

Opportunities

- A growing segment of the beef market is interested in healthier beef (natural beef, grass-fed beef, organic beef)
- Consumers express more interest in and are willing to pay for safe food
- Consumers have higher levels of disposable incomes to spend
- Forage-fed beef is well positioned to be marketed to youth due to the health attributes associated with it
- Target markets may include restaurants, grocery stores, health stores, school-lunch programs, individuals, etc.

Threats

- Imported forage-fed beef
- The adoption of adverse governmental policies and regulations affecting forage-fed beef
- Inconsistent quality of forage-fed beef
- Inadequate quality control of forage-fed beef products (grading)
- Decline in consumer demand for forage-fed beef
- Competition among beef sources (grain-fed, organic beef, natural beef, etc.)
- Competition of alternative meats (pork, poultry, lamb, etc.)

SUMMARY

The concept of forage-fed beef in the United States is not new and actually predates grain-fed beef produced in feedlots. However, despite the numerous forage-fed beef studies conducted during the last 35 years, the vast majority of beef produced today continues to be grain-fed beef from feedlots within or close to the major grain-producing regions. There are many factors that contribute to this production and marketing system some of which include technological advances in grain crop production, cheap grain, cheaper shipping costs for animals than for grain, lower cost per pound of merchantable beef, improved animal performance, less variability in animal performance, less production risk, larger production units, and market power of large feedlots and packing plants.

The future development of a forage-fed meat industry, however, is a possibility. Current research surveys have documented that a segment of U.S. consumers prefer forage-fed beef for its taste, healthiness, and traceability and are willing to pay a premium price. Thus, the development of a forage-fed industry depends on whether sufficient numbers of consumers are willing to vote with sufficient premiums for forage-fed meat products. Under current economic conditions, those premiums appear to be about $1 to $2 per pound of merchantable forage-fed beef. However, successful marketing involves getting products from producers to domestic and international consumers, which is a complex chain of activities that is critical to the economic survival of farms and agribusinesses.

Some of the limitations facing the forage-fed beef industry include the high cost of beef production per pound, achieving adequate animal rates of gain for marbling, availability of adequate quality and quantity of forage for animal weight gains, maintaining a consistent high-quality product for the consumer, maintaining a reasonable level of edible meat yield, imports of forage-fed beef, and educating consumers about the attributes of forage-fed beef. Additionally, the weakening or decline of consumer demand for forage-fed beef would have a serious negative impact on the forage-fed beef industry.

Lastly, the final definition of forage-fed or grass-fed beef as set forth by USDA could also have a major impact on the development and growth of the forage-fed beef industry. The final definition will likely address the types of feedstuffs permitted to be fed, certification process and procedures, management practices, label requirements, and possibly other subject areas. The type of feedstuffs permitted to be fed appears to be the most critical element of the forage-fed definition. It is expected that a forage-fed definition that requires strictly grass consumption will likely constrain the supply and development of the forage-fed beef industry, while a less restrictive feedstuff requirement that allows some level of supplementation would encourage the development of a forage-fed beef industry. The final definition of forage-fed or grass-fed beef is expected in the near future.

The future of the forage-fed beef industry hinges on the USDA definition of forage-fed beef, the level of consumer demand for forage-fed beef, and the many economic variables that affect the forage-fed and grain-fed beef industries. A watchful eye on these items will provide beef consumers and producers with an indication of whether the forage-fed beef industry will become a reality.

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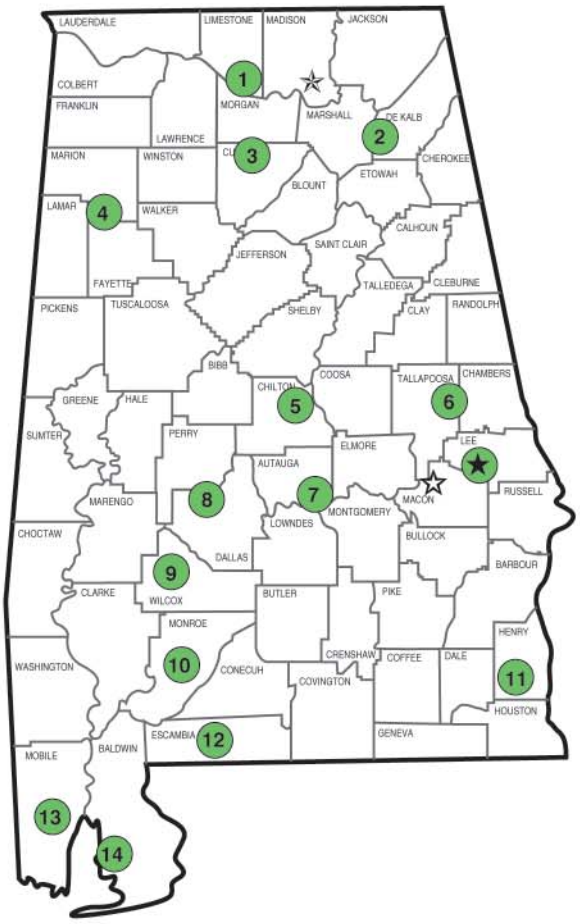
With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the state has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

★ Main Agricultural Experiment Station, Auburn.
☆ Alabama A&M University.
☆ E. V. Smith Research Center, Shorter.

1. Tennessee Valley Research and Extension Center, Belle Mina.
2. Sand Mountain Research and Extension Center, Crossville.
3. North Alabama Horticulture Research Center, Cullman.
4. Upper Coastal Plain Agricultural Research Center, Winfield.
5. Chilton Research and Extension Center, Clanton.
6. Piedmont Substation, Camp Hill.
7. Prattville Agricultural Research Unit, Prattville.
8. Black Belt Research and Extension Center, Marion Junction.
9. Lower Coastal Plain Substation, Camden.
10. Monroeville Agricultural Research Unit, Monroeville.
11. Wiregrass Research and Extension Center, Headland.
12. Brewton Agricultural Research Unit, Brewton.
13. Ornamental Horticulture Research Center, Spring Hill.
14. Gulf Coast Research and Extension Center, Fairhope.