Perceptions of the effectiveness of the Louisiana Master Cattle Producer Program

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PERCEPTIONS OF THE EFFECTIVENESS OF THE LOUISIANA MASTER CATTLE PRODUCER PROGRAM

A Thesis
Submitted to the Graduate Faculty of the Louisiana State University and Agriculture and Mechanical College in partial fulfillment of the requirements for the degree of Master of Science

In
The School of Human Resource Education and Workforce Development

by
Louis Joseph Lirette
B.S., Louisiana State University, 2002
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ABSTRACT

The beef cattle industry continues to be the second largest animal production industry in Louisiana. In 2007, there were 860,000 head of cattle and calves in Louisiana and 14,100 farms and ranches engaged in cattle production. Beef production is virtually statewide, with 63 of 64 parishes generating income from beef production. The Master Cattle Producer Program is designed as a follow-up to the Master Farmer Program. It is a commodity-specific program to enhance the profitability of beef producers by teaching them research-based recommendations on all aspects of beef production.

The purpose of this study was to assess the effectiveness of the Louisiana Master Cattle Producer Program as perceived by those individuals who completed all components of the Louisiana Master Cattle Producer Program. The significant increase in the adoption score of program completers from their self-reported implementation of the practice before participation in the program and the implementation of these practices after completing the Louisiana Master Cattle Producer Program indicates that this program is effective. The practice adoption score was not related to any of the personal and descriptive demographic characteristics of the completers of the Louisiana Master Cattle Producer Program.
CHAPTER 1: INTRODUCTION

The United States’ food system is based on the agricultural industry that has been transforming and become more technologically advanced over the last century. The number of farms in the United States has declined from 6,448,343 farms in 1930 to 2,128,982 farms recorded in the 2002 census, which is a decrease of 66% (National Agricultural Statistics Service [NASS], 2002). During this same time over the last century, the overall population of the United States has increased by 128% from 123,220,644 to 281,421,906 (United States Census Bureau, 2000).

Production agriculture has a direct labor force that only accounts for 1% of the total labor force and less than 1% of the Nation’s gross domestic product (GDP). However, production agriculture is a critical component of the food and fiber system that includes farm inputs, processing, manufacturing, exporting, and a variety of ancillary services. The food and fiber system contributes $1.5 trillion or 16% of the GDP and employs 17% of the total labor force (NASS, 2002).

Cattle production is one major component of the United States food system. In 2007, there were 860,000 head of cattle and calves in Louisiana and 14,100 farms and ranches engaged in cattle production (NASS, 2010). The efficiency of these cattle producers is critical to the value of this system and has value as it relates to the use of raw materials for production (Kress, Hauser, & Chapman, 1969). This efficiency in the cattle production system can relate to numerous factors including cow size (Cartwright, 1979; Klosterman, 1972; Kress, Hauser, & Chapman, 1969), nutritional efficiency as it is expressed in reproduction (Hess et al., 2005), and as economic efficiency is important as it relates to the total food and related product system. Beef cattle are also useful in expressing efficiency in sustainable food systems by converting vast renewable resources from rangeland, pasture, and crop residues or other by-products into food
edible for humans (Oltjen & Beckett, 1996). So, cattle producers must be efficient to be successful, and they must also produce a product that is accepted by the consumer (Dikeman, 1984).

**Cooperative Extension Service in Louisiana**

The Louisiana State University Agricultural Center (LSU AgCenter) has two major components, Cooperative Extension and the Agricultural Experiment Station. The mission of the LSU AgCenter’s Cooperative Extension Service is to provide statewide, off-campus, informal teaching of agricultural and natural resource technology and management techniques as well as other off-campus programs focused on family and consumer sciences, youth development, overall improvement of the state's economy, and efficient use of community and personal resources (Louisiana State University Agricultural Center, 2005a). Due to public concern over agriculture and forestry production practices and their effects on environmental quality in recent years in Louisiana, a multi-agency effort led by the LSU AgCenter developed the Louisiana Master Farmer Program in response to public concern. With over 340 stream segments considered impaired by not meeting oxygen, fecal bacteria, and metals the Louisiana Master Farmer Program was established to demonstrate that farmers will voluntarily reduce the impact of agriculture on the environment, conforming to standards that are set by the Clean Water Act of 1972. The Louisiana Master Farmer Program aims to demonstrate that agricultural producers can and will voluntarily reduce the impact that agricultural production has on Louisiana’s environment (Louisiana State University Agriculture Center, 2001).

Because of the diversity and scope of agriculture production in Louisiana, the Master Farmer Program has expanded to meet the needs of all agricultural producers in the state more effectively. The Master Cattle Producer Program was implemented as a follow-up to the Master Farmer Program and is a commodity-specific program to enhance the profitability of beef
producers by equipping them with important information on all aspects of beef production (Louisiana State University Agriculture Center, 2005b).

**Need for the Study**

The Master Cattle Producer Program has been in operation since July 1, 2004 (Louisiana State University Agriculture Center, 2005b). Successful completion is defined as attending 10 three-hour Master Cattle Producer Lectures in the eight programming areas, becoming Beef Quality Assurance certified, and completing the first phase of the Master Farmer Program which consists of two environmental stewardship lectures totaling 8 hours (Louisiana State University Agriculture Center, 2005b). An evaluation of the effectiveness of this program is needed but has not been conducted. This study will address this need to evaluate the effectiveness of the Master Cattle Producer Program as perceived by program completers.

**Purpose and Research Questions**

The purpose of this study is to assess the effectiveness of the Louisiana Master Cattle Producer Program as perceived by those individuals who completed all components of the program. The study will answer the following research questions:

1. What are the personal and professional characteristics of program completers in the Louisiana Master Cattle Producer Program? The characteristics included in this research question are:
   a. Gender
   b. Age
   c. Education level
   d. Percent of household income generated by the cattle operation
   e. Farm size
   f. Farm type
   g. Number of years raising cattle
2. Did the program completers implement the production practices recommended by the LSU AgCenter in their cattle operation prior to participating in the Louisiana Master Cattle Producer Program? The eight recommended practices programming areas include: reproduction, animal health, financial management, nutrition, animal breeding and selection, animal handling, end product, and pasture management.

3. To what extent did the program completers report the implementation of the production practices recommended by the LSU AgCenter in their cattle operation after participating in the Louisiana Master Cattle Producer Program? The eight recommended practice programming areas are listed in research question 2.

4. As perceived by the program completers, what is the value of the training received from the Master Cattle Producer Program to producers’ success in the following areas: reproduction, animal health, financial management, nutrition, animal breeding and selection, animal handling, end product, and pasture management?

5. Determine if a relationship exists between the extent program completers in the Louisiana Master Cattle Producer Program reported implementation of the recommended practices in the eight programming areas (listed in research question 2) and the following personal and demographic characteristics:
   a. Gender
   b. Age
   c. Educational Level
   d. Percent of household income generated by the cattle operation
   e. Farm size
   f. Farm type
   g. Number of years in cattle business
6. Determine if Louisiana Master Cattle Producer Program completers recommended practice adoption score changed from their pre-program score to their post-program score.

7. Determine the Louisiana Master Cattle Producer Program completers perceptions of the future programming needs of the Louisiana Master Cattle Producer Program in the eight programming areas listed in research question 2.

**Definition of Terms**

The following terms and their definitions are to be used to assist in the interpretation of this study.

- **Stocker** – The winter stocker system involves grazing weanling or yearling cattle to heavier weights on lush pasture. It has its basis in a favorable winter growing season for ryegrass, oats and wheat. These forages provide high-quality pasture (from November to May in a good year) capable of increasing the weights of grazing animals. The general idea is to profit on the increased animal weights produced at comparatively low pasture costs.

- **Seedstock** – Seedstock cattle are breeding cattle typically registered with a breed association. These breed associations typically offer the following services; (1) providing a registry and ancestral history on the purebred animal with registered parents, (2) maintaining rules governing eligibility of animals for registry, (3) promoting the breed to increase sales, (4) providing guidelines for performance and progeny testing, and (5) providing many other services of value to the breeder-membership.

- **Cow-Calf Operation** – Producers maintain and breed a herd of brood cows and sell the calves as weanlings. This segment of the beef cattle industry requires the most land and
capital investment per animal unit and is more vulnerable to market depressions. On the other hand, the cow-calf enterprise can be managed with less labor than other segments of the business.
CHAPTER 2: REVIEW OF RELATED LITERATURE

History of Cooperative Extension

According to H. C. Sanders, the first time the concept of extension work was used in America was in 1785, when an agricultural society was organized. These societies were organized on different state and local levels with two basic functions. First, these societies provided an educational program to their members by discussion of local agricultural problems or by lecture from someone from the local college. The second focus was to promote agriculture. These societies’ efforts to promote agriculture later led to the creation of the Department of Agriculture and agricultural colleges (Sanders, 1966).

It was not until 1862 when then President Abraham Lincoln signed into law the Morrell Act. This legislation provided federal lands to states to create colleges for the state sponsored teaching of agriculture, mechanical arts, and military tactics. The study of agriculture at land grant institutions led to the development of the laboratory method, which was the use of experimentation, to teach. This scientific experimentation was needed due to the constant demand for more practical farming applications. The Hatch Act of 1887 addressed those demands by creating experiment stations for each of the land grant institutions and charged them with diffusing useful and practical information about agriculture and promoting scientific experiments pertaining to the practices and applications of agricultural science (Seevers, Graham, Gamon, & Conklin, 1997).

In 1914, the Smith-Level Act extended the work of the Morrell Acts and the Hatch Act by establishing the Cooperative Extension Service to aid in diffusing useful and practical information relating to agriculture and home economics. The act further stipulated that this work would primarily be instruction and practical demonstrations in agriculture, home economics, and related subjects to people that did not attend college (Seevers et al., 1997).
Through the years, the extension service has had to shift its focus to meet the needs of the times. During the 1940’s, advances in agriculture led to programs encouraging the adoption of hybrid grains, chemical control of agricultural pests, and new soil tillage and fertilization practices. This change continued into the 1960’s and 1970’s with new problems and challenges facing farmers. Extension responded to these needs with programs for low-income and minority groups, programs for migrant workers, and substantial increases in programs aimed at urban populations. Special funding provided by the federal government expanded programming in foods and nutrition, integrated pest management, energy, pesticide application, sea grants, rural development, and urban gardening (Seevers et al., 1997).

Furthermore, this trend of change continued as the economic recession of the 1980’s hit rural America and programs in stress management and farm business management were necessary programs. In addition, efforts were made to increase programming in 4-H, family living, community resource development, and natural resources (Seevers et al., 1997).

While Rural America was declining in size and economic importance, the Cooperative Extension Service worked to strengthen its importance in the American lifestyle. As America has changed, the Cooperative Extension Service has changed to meet the needs of the American people in a wide array of programming focused on human, plant, and animal needs in both rural and urban areas. The Cooperative Extension Service is part of the U.S. Department of Agriculture’s Cooperative State Research, Education, and Extension Service (CSREES). Today, the six main areas of programming in the Cooperative Extension Service (Cooperative State Research, Education, and Extension Service, 2006) are:

- 4-H Youth Development—cultivates important life skills in youth that build character and assist them in making appropriate life and career choices. At-risk youth participate in
school retention and enrichment programs. Youth learn science, math, social skills, and much more, through hands-on projects and activities.

- **Agriculture**—research and educational programs help individuals learn new ways to produce income through alternative enterprises, improved marketing strategies, and management skills and help farmers and ranchers improve productivity through resource management, controlling crop pests, soil testing, livestock production practices, and marketing.

- **Leadership Development**—trains extension professionals and volunteers to deliver programs in gardening, health and safety, family and consumer issues, and 4-H youth development and serve in leadership roles in the community.

- **Natural Resources**—teaches landowners and homeowners how to use natural resources wisely and protect the environment with educational programs in water quality, timber management, composting, lawn waste management, and recycling.

- **Family and Consumer Sciences**—helps families become resilient and healthy by teaching nutrition, food preparation skills, positive child care, family communication, financial management, and health care strategies.

- **Community and Economic Development**—helps local governments investigate and create viable options for economic and community development, such as improved job creation and retention, small and medium-sized business development, effective and coordinated emergency response, solid waste disposal, tourism development, workforce education, and land use planning (CSREES, 2006, ¶ 16-21).
**Program Evaluation**

Scriven defines evaluation as, “. . . the process of determining the merit, worth and value of things, and evaluations are the products of that process” (Scriven, 1991, p. 1). Fitzpatrick, Sanders, and Worthen (2004) agreed with Scriven’s definition but added that evaluation should include identification, clarification, and application of defensible criteria to determine an evaluation object’s value, merit, or worth, in relation to those criteria. One must always use clear definitions when using defensible criteria before attempting to evaluate any program (Fitzpatrick, Sanders, & Worthen, 2004).

History shows that as early as 2200 B.C., the emperor of China required proficiency requirements from his public officials (Guba & Lincoln, 1981). Evaluation may be a new discipline that we have seen evolve in the last 50 years, but personnel and program evaluation has roots in ancient Egypt and China. In the heyday of Japanese sword making, the evaluation of the swords became a hereditary profession whose most experienced practitioners signed the sword next to the sword-smith’s signature (Scriven, 1991).

Scriven stated that there are two types of educational program evaluation methods, formative and summative. Formative evaluation is used to provide information for program improvement, usually judging the worth or merit of part of a program (Scriven, 1967). In contrast summative evaluations provide information to assist in making judgments about program adoption, continuation, or expansion, often helping with judgments of a program’s merit or worth in relation to important criteria (Fitzpatrick et al., 2004).

The construction of an evaluation is ever changing but Guba and Lincoln (1981) say that the construction has become more informed and sophisticated and devised a four “Generation” approach to describe the evolution of evaluation. The first generation is measurement, simply referring to the hundreds of years of mastery testing. Second is the description generation; after
World War I, educators realized the need to change curricula due to the increase in student populations that stayed in school beyond the elementary grades. Next, the judgment generation came about during the cold war era when the National Science Foundation was promoting course content improvement programs, but the teams set up to implement the changes demanded objectives to work towards before beginning. The last generation takes the claims, concerns, and issues of the stakeholders and utilizes evaluation models as the basis for obtaining the desired information (Guba & Lincoln, 1989).

**Adult Learning Theory**

The role of adult learning theory is an important part of evaluating an adult Cooperative Extension program. Merriam and Caffarella (1991) stated that learning can be defined in a variety of ways, with the majority of the definitions for learning including the concepts of behavioral change and experience. They further stated that these definitions usually failed to capture some of the complexities involved in learning such as ones need to perform in order for learning to have occurred or whether all human behavior is learned. The only component that was a constant factor in all definitions for learning was change; however, changed has been modified to potential change. Furthermore, learning is a process that focuses on what happens when learning takes place, with the explanation of what happened called a learning theory (Merriam & Caffarella, 1991).

According to Knowles, Helton, and Swanson (2005), there are two main theories for learning, pedagogy and andragogy. He states that the main difference is the concept that pedagogy is the art and science of teaching children and andragogy is the art and science of helping adults learn. When comparing the two theories, there are six assumptions about characteristics of learners in the andragogy theory that differ from the assumptions for pedagogy. As people mature, the assumptions are:
1. Need to know – Adults need to know why the need to learn before the will put forth effort.

2. The learner’s self-concept – Adults have a self-concept of being responsible for their own decisions.

3. The role of the learner’ experiences – Adults come into an educational activity with both a greater volume and different quality of experience from that of a youth.

4. Readiness to learn – Adults become ready to learn those things they need to know and be able to cope effectively with their real life situations.

5. Orientation of learning – In contrast to children’s [SIC] and youths’ subject centered orientation to learning, adults are life-centered in their orientation to learning.

6. Motivation – Adults are responsive to some external motivators, but the potent motivators are internal pressures (Knowles et al., 2005, p.64-69).

Franz states that the Cooperative Extension Service, the largest adult education institute in America, should be grounded in adult education theory. Franz maintains that this is especially important as the Extension systems throughout the country change themselves to serve their clientele better. The theories of transformative learning and critical reflection are crucial to Extension programs because of the focus on developing more participatory learning. Thus, if Extension created opportunities for learners to experience disorientating dilemmas, critically reflect on their assumptions, and facilitate how to learn - not just on what to learn, there could be more critical learning occurring (Franz, 2007).

Adult learning theory suggests a triggering event leads to the transformative learning process. This learning process requires the learner to think deeply about assumptions that changed due to the triggering event with the learner thus creating a new meaning of their
experience. From this new context that is created by the triggering event and through conversations with others to access and justify their assumptions, resulting in reflective action from changes in life experiences (Mezirow, 2000). Mezirow states that transformative learning occurs in a 10-step process:

1. Experience a disorienting dilemma,
2. Undergo self-examination,
3. Conduct a deep assessment of personal role assumptions and alienations created by new roles,
4. Share and analyze personal discontent and similar experiences with others,
5. Explore options for new ways of acting,
6. Build competence and self-confidence in new roles,
7. Plan a course of action,
8. Acquire knowledge and skills for action,
9. Try new roles and assess feedback, and
10. Reintegrate into society with a new perspective. (Mezirow, 2000 p. 22)

According to Franz (2007), the transformative learning theory implications for Extension are:

- More effective interdisciplinary problem resolution may be more likely to lead to Extension’s transformation rather than simply delivering content or attempting problem solving via a one-discipline approach.
- Transformative learning theory values the extension workers’ role as a facilitator of learning rather than the extension worker simply serving as a disseminator of content, which aids in solidifying Extension’s role of solving complex public problems.
• Theory also supports the vibrant role that group transformation plays in effecting change. Group-based personal transformation can create organizational change more successfully than change efforts implemented by an organization's leader.

• Applied and participatory research forms the foundation for transformative learning in Extension, which correlates with Extension’s transformation to a more decidedly democratic learning environment that utilizes knowledge co-creation by Extension faculty/ staff and stakeholders.

• Transformative learning theory strengthens self-sufficiency and results in strengthened accountability as transformed learners work together to monitor and assess progress. This self-sufficiency also supports Extension’s organizational transformation goal to improve the communication of Extension’s value to the public.

Innovative Practice Adoption

Even after completing non-formal adult education programs, an innovation has little value until it is adopted in a useful or measurable way. The Cooperative Extension Service has always had a reputation for being one of the world’s leading systems for the diffusion and adoption of agriculture innovation. Innovations consist of new idea’s, innovative farming practices, and newly designed or improved objects that are perceived as being new to the individuals or industry (Rogers, 2003). The adoption of a recommended practice by a farmer and rancher is one example of an innovation and is affected by their willingness to accept or adopt new ideas and change. Rogers defines the Innovation-Decision Process (adoption process) as the steps through which a person passes from first learning about a new idea to final adoption of the practice and divides the process into five stages.
1. Knowledge - The stage that the producer will come into first contact with the new idea, product, or practice. The producer has little knowledge on the idea, product or practice and is usually not motivated to seek out new or further information.

2. Persuasion – The stage that the producer forms an opinion towards the innovation, either favorable or unfavorable.

3. Decision - The stage the producer will consider information collected and make a mental judgment of the pros and cons of the information obtained while also deciding if the innovation will be adopted or rejected.

4. Implementation – The Stage that the producer will actually put the idea, product, or practice into use. The trial is limited at first, until the experiment proves successful.

5. Confirmation – This is the stage that the producer has accepted the innovation but seeks reinforcement of the innovation-decision and may change mind if exposed to negative information (Rogers, 2003, p. 169).

When an educator desires to pinpoint the educational programming to gain the greatest impact in implementing a new practice, they should seek out the innovators or early adopters within the group to use as demonstrators. These local innovators can provide local trials for others to see after they have read technical and research publications, to provide an appropriate awareness and interest in further evaluation of this new technology (Rollins, 1993).

Programming that result in clientele making changes in their behavior has many challenges to Extension professionals including; motivating our clientele to adopt new behaviors, providing support to individuals as they make changes, determining what exactly constitutes a behavior change, and measuring the degree of change the client has experienced (Clements,
1999). She goes on to state that each extension educator should ask themselves the following eight questions to help encourage practice adoption (Clements, 1999, ¶14):

1. What are my priorities for programming? These must be clearly defined and based on our own individual strengths and identified gaps in local programs.

2. Have I clearly stated the objectives for the program so that I know the specific behavior change desired, and the time frame for this change to take place?

3. How will I determine if change in behavior has indeed occurred? Evaluation tools must be developed during program planning. We should consider designing these tools to measure change from one stage to another, for example from information gathering to action.

4. How will I motivate participants to begin to change their behaviors?

5. Will time be needed for participants to collect data necessary to take action?

6. Will a follow-up session be needed before action can be taken or will individual counseling be more useful? Has time been scheduled to provide this support? Our concern must be that without support, some clientele may do nothing at all, diminishing the impact of the program.

7. Has time to administer follow-up evaluation tools been built into program plans? This is often done either by mail or telephone.

8. How many of the clientele in a program can I realistically expect to adopt new practices? It will certainly be fewer than the number of participants in the program. Everyone will not be ready to change. However, our goal should be to begin to move our clientele from one stage of change to another in order to maximize program impact in terms of adoption of best practices.
Factors Related to Innovative Practice Adoption

Economic and technical factors play a large part in the adoption of an innovation. No educator should assume that the client knows anything going into an educational program. This problem could be solved by prerequisite courses or follow-up courses to alleviate any barriers or negative attitudes that may come from the feeling of being left out (King & Rollins, 1995).

According to Polson (1999), information sources have a significant impact on the adoption of agriculture innovations and should be considered critical when developing educational programs. When using “Master Farmers” as model farmers for demonstrations, there can be practices that farmers use that are not supported by research.

When educating potential adopters, it is crucial that they learn the economic aspects of the innovation since supply and demand considerations play an integral role in determining the diffusion and adoption rates, which can be explained to the clients by the expected profits from utilizing the innovation (Rogers, 2003). There can be opportunities and challenges that exist in delivering some innovative practices to a hard-to-reach audience. The following are some steps that target these participants and provide a standardized method to help create a better learning and adoption rate (Hanson, 1995).

- Minimum standards should be established and publicized for the new technology so that the adopter can benefit from definitions of the components required and a sense of the integrity of the system.

- Actively assist the participant in sequential adoption of the new technology and management methods, preferably in incremental phases.

- Address the bottlenecks by focusing on specific and manageable problems in the workshop.
• Identify financial incentives, whether there is a reduction in input cost or the profit far exceeds the input.
• Follow-up training to give updates on technology, refreshers on the previous material, and demonstrations of successes.
• Listen to the participants, their experience could be critical in the efficient design and implementation of the program.
• Communicate with the researches to insure their knowledge of the difference between the laboratory conditions and the real world conditions. Educating researchers will lead to more effort toward real problems.

Extension educators most also look at themselves and the implications of their attitudes of the promotion of an innovation. Their motivation and enthusiasm towards this innovation must be could be effected by the facilitating agents (King & Rollins, 1995b). Also, extension agents need to look at potential patterns in preferences of clients based on age, educational status, and farm size towards methods of receiving information on new or innovative farming practices (Riesenberg & Gor, 1989).

**Research on Effectiveness of Extension Education Programming**

Programming evaluation plays an important role in providing feedback for Extension personnel on the effectiveness of their programs and what improvements in teaching are needed which in turn assist administrators with personnel decisions (Lackman, Nieto, & Gliem, 1997). When evaluating extension programs, especially measuring effectiveness of the adopted practice, researchers should address factors beyond the scope of the program before drawing conclusions (Smith, Boutwell, & Allen, 1983). Also before starting any evaluation a critical part of the program planning process is a carefully designed program evaluation that includes procedures
for identifying program participants, developing survey instruments based on program objectives, collecting data, and communicating the findings (Gentry-Van Laanen & Nies, 1995; Lindner & Nieto, 1998).

Extension programming consists of multiple types of programming with multiple teaching styles and structures. According to Maiorano and Futris (2005), the use a per-session evaluation tool would greatly increase the success in assessing changes in participants' knowledge, confidence, and skills as they relate to each session's topic in a multiple session program. It is common for little to be said about variations in data or about teaching quality. However, by changing our traditional Extension education evaluation methods to include continuous quality improvement techniques, the evaluation process becomes more appropriate and effective (Lindner & Nieto, 1998).

Linder and Nieto go on to say that during the evaluation process, variation can be a factor when analyzing data. Special cause variation must be identified, examined, and eliminated using the following steps:

- The first step is identifying that the variation occurs.
- Next, a determination should be made regarding why special cause variation exists and action should be implemented to resolve the problem.
- Finally, the reasons for special cause variation must be identified. (Lindner & Nieto, 1998)

Agents should always examine alternatives to improve the methods used in delivering information to clients and should consider ways to enhance the focus of the programs they provide to farmers (Habeeb, Birkenholz, & Weston, 1987). They should also be trained in identifying methods and principles of teaching and learning, and they should be encourage to
carefully match instructional methods and tools to the subject matter content and audience needs (Martin & Omer, 1990).

**Factors Related to Innovative Practice Adoption by Extension Clients**

The goal of all programs conducted by the Cooperative Extension Service is to have a measureable and attainable level of practice adoption; however, the true need is to know the factors that affected the client to choose to adopt that practice. A few factors, especially relating to agricultural programming include location, annual pest population fluctuations, and specific production expectations (Mitchell et. al, 2001). Funding sources should also be included with research results to insure that producers are aware of the reliability of information before making conclusions (Licht & Martin, 2007).

Many times farmers assess practices in terms of the increase in profit. Extension educators should always look at innovations in terms of their risk, alternatives to this practice, what has been done in the past and plans for the future, and lastly the economic factors should be addressed directly to the client (King & Rollins, 1995a). Furthermore, King and Rollins (1995a) state that the extension educator should use a holistic approach in presenting an innovation to better show how this change along with all the other recommended practices will benefit the client and help make more informed decisions in the future.

Participants in an educational program that is meant to convince clients to adopt innovative practices can be themselves influenced by several factors including clients major source of income (on-farm or off-farm), market destination of the output product, farm size, and diversity of crops produced (Alston & Reding, 1998). Alston and Reding also stated that past educational programming efforts by extension in that programming area and past creation of commodity organizations will influence the client’s perceptions of the current practices being taught.
CHAPTER 3: METHODOLOGY

Population and Sample

The target and accessible population for the study included all individuals who had completed all components of the LSU AgCenter Master Cattle Producer Program as of July 1, 2007 ($N = 440$). Cochran’s sample size formula indicated that 93 was the minimum returned random sample size needed for the study. Due to an anticipated response rate as low as 40%, the random sample selected for the study was 236 program completers of the LSU AgCenter’s Louisiana Master Cattle Producer Program as of July 1, 2007.

Instrumentation

A researcher-designed questionnaire (Appendix A) was developed to address the research questions for this study. The questionnaire had four sections. The first section of the questionnaire collected selected personal and demographic information regarding the study subjects. These variables included: (1) gender, (2) age, (3) education level, (4) percent of household income generated by the cattle operation, (5) farm size, (6) farm type, and (7) number of years in the cattle business.

The second section of the instrument was designed to measure the program completers self-perceived level of prior and current use of recommended practices in the eight programming areas: reproduction, animal health, financial management, nutrition, animal breeding and selection, animal handling, end product, and pasture management. Respondents were asked to report their prior and current use of the recommended practices for each of the eight programming areas using a five point Likert-type scale with values of 1 = “Never,” 2 = “Sometimes,” 3 = “Often,” 4 = “Most of the time,” and 5 = “Always.”

The third section of the instrument was designed to measure the perceived value of the eight programming areas to program completers overall success in the cattle industry.
Respondents were asked to report their perception of the value of the recommended practices to their personal success for each of the eight specific areas on a five point Likert-type scale with values of 1 = “Very Low Value,” 2 = “Low Value,” 3 = “Moderate Value,” 4 = “High Value,” and 5 = “Very High Value.”

The fourth section of the instrument was designed to identify the program completer’s perceptions of future training needs in the eight programming areas. The program completers were asked to rate their level of need on a four point scale of 1 = “No Need,” 2 = “Some need,” 3 = “Moderate need,” and 4 = “High Need.” They were also asked to indicate the type of training needed for those programming areas for which they indicated they had moderate or high need for training.

**Content Validity**

The face and content validity of this study was established through a field test of the instrument and by a review by a panel of experts consisting of the five Louisiana Master Cattle Producer program coordinators in Louisiana and the state coordinator of the Louisiana Master Cattle Producer program. The instrument was given to six completers of the Louisiana Master Cattle Producer Program who were not selected to participate in the study and these individuals were asked if the questions were clear and concise. The final version of the instrument was developed based on the input from the panel of experts and the results of the field test.

**Data Collection**

A cover letter (Appendix B) was attached to the questionnaire with a postage paid self-addressed return envelope and mailed to 236 randomly selected Louisiana Master Cattle Producer program completers. A second questionnaire and cover letter (Appendix C) was sent to non-responders two weeks after the original mail out. A phone follow-up of a random sample of 25 non-responders was conducted two weeks after the second mailing. After the three data
collection efforts, a total of 129 responses were received which represented a 54.7% response rate.

Data Analysis

The alpha level for all statistical tests was preset at \( a = .05 \). The data for the comparison of the mail and phone responses and for research question was analyzed as follows:

1. Inferential \( t \)-tests were used to compare the mail and phone respondents on their responses to the following three scales:
   a. Master Cattle Producer recommended practice adoption before participating in the program;
   b. Master Cattle Producer recommended practice adoption after participating in the program; and
   c. Perceived value of instruction received.

A summated mean was calculated for each of the three scales. Inferential \( t \)-tests were used to determine if differences exist in the summated means by whether the participant responded by mail or phone. If significant differences existed in any of the summated means by response mode, Cohen’s \( D \) was used to interpret the effect size for the difference(s). If any differences did not rise to the level of having at least a small effect size according to Cohen, it was declared that the non-respondents did not differ from the respondents; therefore, they were a representative sample of the Master Cattle Program completers, and the data was combined for further analyses. If the effect size for any differences found rose to the level of a small effect size or larger, then it was declared that the non-respondents differed from the mail respondents, and it was declared that the data represented the respondents only.
2. Research question 1 was to describe the personal and demographic characteristics of program completers in the Louisiana Master Cattle Producer Program. Number and percentages were used to describe the respondents on gender, educational level, farm size, and farm type. Means and standards deviations were used to describe the respondents’ age, percentage of income derived from the cattle operation, percentage of household income generated by the cattle operation, farm size as indicated by the number of breeding cows owned/leased/managed, and number of years in the cattle business.

3. Research Question 2 sought to determine if the program completers, prior to participating in the Louisiana Master Cattle Producer Program, had implemented any of the recommended practices in the eight programming areas. The respondents rated their self-perceived level of implementation of the recommended practices of cattle production prior to participation in the Louisiana Master Cattle Producer Program on a five point Likert-type scale: 1 = “Never,” 2 = “Sometimes,” 3 = “Often,” 4 = “Most of the time,” and 5 = “Always.” Means and standard deviations were calculated for each item on the scale and a summated mean was calculated for all items in the scale.

4. Research Question 3 was designed to determine if the program completers, after participating in the Louisiana Master Cattle Producer Program, had implemented any of the recommended practices in the eight programming areas. The respondents rated their self-perceived level of implementation of the recommended practices of cattle production after participation in the Louisiana Master Cattle Producer Program on a five point Likert-type scale: 1 = “Never,” 2 = “Sometimes,” 3 = “Often,” 4 = “Most of the time,” and 5 = “Always.” Means and standard deviations were calculated for each item on the scale.
5. Research Question 4 sought to determine the perceived value of each of the eight programming areas to the program completers’ success in the cattle business. Respondent indicated their self-perceived level of importance to their success in the cattle business of the recommended practices of cattle production on a Likert-type scale: 1 = “Very Low Value,” 2 = “Low Value,” 3 = “Moderate Value,” 4 = “High Value,” and 5 = “Very High Value.” Means and standard deviations were calculated for each item on the scale.

6. Research Question 5 addressed if a relationship existed between the extent program completers in the Louisiana Master Cattle Producer Program implemented the recommended practices for each of the eight programming areas and selected personal and demographic characteristics. Practice implementation gain scores were calculated by subtracting the program completers practice implementation scores before participation in the Master Cattleman program from their practice implementation scores after participation in the Master Cattleman program. Pearson correlations were used to assess whether an association exists between practice implementation and age, percentage of income derived from the cattle operation, farm size as indicated by the number of cows owned/lease/managed, and number of years in the cattle business. Point bi-serial correlations were used to assess whether an association exists between practice implementation and two farmer characteristics, namely, gender and educational level. The strength of any statistically significant associations was interpreted using the set of descriptors proposed by Hopkins (1997).

7. Research Question 6 was to determine whether Louisiana Master Cattle Producer Program completers recommended practice adoption score changed from their pre-
program score to their post-program score. A paired t-test was used to analyze the data for this research question. If the paired t-test was statistically significant, Cohen’s $D$ was utilized to interpret the effect size if a statistically significant difference existed.

8. Research Question 7 was to determine the future programming needs of the Louisiana Master Cattle Producer Program completers. The respondents responded to the eight programming needs on a four-point scale: 1 = “No Need,” 2 = “Some Need,” 3 = “Moderate Need,” and 4 = “High Need.” Means and standard deviations were calculated for each item on the scale.

**Institutional Review Board Approval**

Prior to collecting data, the researcher obtained permission to gather data from the graduate committee. Next, the researcher obtained approval for the research proposal from the Louisiana State University Institutional Review Board (IRB). The Louisiana State University (IRB) granted an exemption for the study, project number 2009-E4878 (Appendix D).
CHAPTER 4: FINDINGS

To determine if non-respondents who completed surveys as a result of the phone follow-up data collection differed significantly from early responders to the survey, the non-respondents were compared to the respondents on two key variables. These variables were: 1) the mean of the 21 questions that measured the program completers’ self-perceived level of adoption of the LSU AgCenter’s recommended production practices before and after participating in the Louisiana Master Cattle Producer Program (2 scales: before and after), and 2) the mean of the eight items that measured their self-perceived value of the education they received from the program.

Table 1 shows the comparison of the means of the program completers’ self-perceived implementation of the LSU AgCenter’s recommended production practices completed during the mailing versus phone follow-up by three variables. This data indicated that there was no significant difference between the data collected from the respondents and the random sample of non-respondents for any of the three variables measured; therefore, all data were combined and considered representative of both the target and accessible population of program completers.

Table 1. Results of t-Test Comparing the Mean Responses for Three Key Variables by Response Mode – Respondent Versus Random Sample Non-Respondents After Telephone Reminder

<table>
<thead>
<tr>
<th></th>
<th>Respondents</th>
<th></th>
<th>Non-respondents</th>
<th></th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>m</td>
<td>sd</td>
<td>n</td>
<td>m</td>
<td>sd</td>
</tr>
<tr>
<td>Before</td>
<td>87</td>
<td>2.50</td>
<td>.79</td>
<td>20</td>
<td>2.61</td>
<td>.76</td>
</tr>
<tr>
<td>After</td>
<td>85</td>
<td>3.45</td>
<td>.62</td>
<td>20</td>
<td>3.34</td>
<td>.71</td>
</tr>
<tr>
<td>Value</td>
<td>104</td>
<td>4.04</td>
<td>.73</td>
<td>21</td>
<td>4.10</td>
<td>.64</td>
</tr>
</tbody>
</table>

The results of the data analyses for the research questions in this study will be presented in order of each research question listed in chapter one. All results are presented in tables and the results will be discussed in order by research question.
Research Question 1: Personal and Demographic Characteristics

The first research question was to address the personal and demographic characteristics of Louisiana Master Cattle Producer Program completers. The characteristics included in this research question are: gender, age, education level, percent of household income generated by the cattle operation, farm size, farm type, and number of years raising cattle.

The descriptive data for research question one is presented in Table 2. Most of the respondents \( (n = 112, 86.8\%) \) were male while the remainder of the sample of respondents \( (n = 17, 13.2\%) \) was female. The mean age of all respondents was 53.1 years old \( (SD = 13.2) \). The ages ranged from 18 years to 76 years. Table 1 shows that the largest group of completers were those who were between the ages of 51 and 60, with 47 completers in this age group \( (36.6\%) \).

The next completer characteristic was the education level of program completers. The completers were asked to indicate their highest level of education completed by selecting the most appropriate response from the following categories: some high school; high school diploma or GED; technical school or community college graduate; college degree (e.g., B.S., B.A.) or graduate degree (e.g., M.S., Ph.D., D.V.M.). The largest group \( (n = 50, 38.7\%) \) of completers indicated that their highest level of education completed was high school diploma or GED. The smallest group \( (n = 2, 1.6\%) \) of completers indicated that their highest level of education completed was some high school.

To determine the portion of income received from the production of cattle, respondents were asked to indicate the percentage of their total household income that was derived from cattle production. Responses were then split into ranges of equal parts (25% increments). The majority of producers indicated that they received 0% - 25% of their total household income from cattle production \( (N= 84, 64.7\%) \). Producers who’s total income derived from cattle production ranging between 76% - 100% were the smallest reported group \( (N=4, 3.1\%) \). The
Table 2.  Personal and Demographic Characteristics of Completers in the Louisiana Master Cattle Producer Program

<table>
<thead>
<tr>
<th>Variable Category</th>
<th>n</th>
<th>%</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>112</td>
<td>86.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>17</td>
<td>13.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age in years</td>
<td></td>
<td></td>
<td>53.1</td>
<td>13.2</td>
</tr>
<tr>
<td>20-less</td>
<td>2</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30</td>
<td>6</td>
<td>4.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-40</td>
<td>17</td>
<td>13.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>19</td>
<td>14.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51-60</td>
<td>47</td>
<td>36.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61-70</td>
<td>26</td>
<td>20.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71-80</td>
<td>11</td>
<td>8.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some High School</td>
<td>2</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or GED</td>
<td>50</td>
<td>38.7</td>
<td></td>
<td></td>
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<tr>
<td>Technical School</td>
<td>19</td>
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<td></td>
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<tr>
<td>College Degree</td>
<td>42</td>
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<tr>
<td>Graduate Degree</td>
<td>16</td>
<td>12.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of household income generated by cattle operation</td>
<td>21.0</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-25%</td>
<td>84</td>
<td>64.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-50%</td>
<td>16</td>
<td>12.7</td>
<td></td>
<td></td>
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<tr>
<td>51-75%</td>
<td>7</td>
<td>5.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>76-100%</td>
<td>4</td>
<td>3.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>18</td>
<td>14.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of breeding age cows owned, leased, or managed</td>
<td>121.1</td>
<td>277.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-20</td>
<td>33</td>
<td>25.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-50</td>
<td>29</td>
<td>22.8</td>
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<tr>
<td>51-100</td>
<td>20</td>
<td>15.8</td>
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<tr>
<td>101-500</td>
<td>32</td>
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<tr>
<td>501-up</td>
<td>4</td>
<td>3.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>11</td>
<td>8.5</td>
<td></td>
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(table continued)
<table>
<thead>
<tr>
<th>Variable Category</th>
<th>n</th>
<th>%</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of cattle operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cow-Calf</td>
<td>115</td>
<td>89.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stocker</td>
<td>3</td>
<td>2.3</td>
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<tr>
<td>Seedstock</td>
<td>9</td>
<td>7.0</td>
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<tr>
<td>No Response</td>
<td>2</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of years in cattle business</td>
<td></td>
<td></td>
<td>22.9</td>
<td>13.3</td>
</tr>
<tr>
<td>1-5</td>
<td>12</td>
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<td></td>
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<td>17</td>
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<td>11-15</td>
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<td>13.2</td>
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<td>16-20</td>
<td>19</td>
<td>14.6</td>
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<td>21-25</td>
<td>14</td>
<td>10.9</td>
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<td>26-30</td>
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<td>41-up</td>
<td>9</td>
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</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>.8</td>
<td></td>
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</tr>
</tbody>
</table>

Note. N = 129. Data was collected from Louisiana Master Cattle Producer Program Completers during January, 2010.

The average percentage of the total household income that was derived from cattle production was 21.0% (SD = 2.3).

The number of breeding age cows or the number of stocker cattle was used to determine the size of the farming operation for each program completer. Respondents were asked to only give the number of cattle related to the type of operation that was their main-use, namely, cow-calf, stocker, or seedstock. The majority of producers indicated that they were involved in cow-calf operations (N = 115, 89.1%). The least reported operation type was the stocker operation (N = 3, 2.3%). Including all respondents regardless of operation type, the mean size of the cattle operations was 121.1 cows (SD = 277.5).

The last characteristic the respondents were asked to report was the number of years they had been involved in beef cattle production. The respondents had been involved in beef cattle
production for an average of 22.9 years ($SD = 13.3$). Responses were then split into ranges of equal parts (5 year increments). The largest group of producers indicated that they were involved in beef cattle production for 15 – 20 years ($N = 19, 14.9\%$).

**Research Question 2: Implementation of Production Practices Prior to Participation**

The second research question sought to determine the extent that program completers implemented the production practices recommended by the LSU AgCenter in their cattle operation prior to participating in the Louisiana Master Cattle Producer Program. Respondents were asked to provide a rating on 27 recommended production practices that relate to the eight programming areas within the Louisiana Master Cattle Producer Program. Responses to the researcher-designed self-perceived adoption section were measured on a five point anchored scale with values as follows: 1 = “Never,” 2 = “Sometimes,” 3 = “Often,” 4 = “Most of the time,” and 5 = “Always.” Means and standard deviations for each item and a summated scale mean were calculated to summarize the data for this research question. These data are presented in Table 3.

To help facilitate the interpretation of the results of this objective, the researcher established the following interpretive scale: 1 – 1.49 = “Never,” 1.50 – 2.49 = “Sometimes,” 2.50 – 3.49 = “Often,” 3.50 – 4.49 = “Most of the time,” and 4.50 – 5.0 = “Always.” Based on the results of this analysis, the recommendation in which completers of the Louisiana Master Cattle Producer Program perceived that they had the highest level of implementation prior to participating in the program was “Ensured that heifers reached 65% of expected mature weight before being exposed to a bull for first breeding” ($M = 3.44, SD = 1.37$) which indicates this recommendation was often followed. The recommendation in which the group had the lowest level of self-perceived implementation prior to participating in the program was, “Conducted tenderness DNA test on sires selected for breeding” ($M = 1.23, SD = .73$) which indicate this
recommendation was never used. The summated mean of the self-reported implementation of recommended practices was \( M = 2.35, SD = .78 \) which reveals these recommendations, as a group, were used sometimes prior to program participation.

Table 3. Extent to Which Completers Implemented the Production Practices Recommended by the Louisiana State University Agricultural Center in their Cattle Operation before and after Participating in the Louisiana Master Cattle Producer Program

<table>
<thead>
<tr>
<th>Item #</th>
<th>Cattle Production Practices Before and Participation in the Louisiana Master Cattle Producer Program</th>
<th>Before participation</th>
<th>After participation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>4</td>
<td>Ensured that heifers reached 65% of expected mature weight before being exposed to a bull for first breeding</td>
<td>123 3.44 1.37</td>
<td>122 4.30 .93</td>
</tr>
<tr>
<td>16</td>
<td>Based sire selection on strengths of major categories of beef breeds</td>
<td>124 3.24 1.40</td>
<td>122 4.25 1.11</td>
</tr>
<tr>
<td>7</td>
<td>Evaluated vaccination program and made changes as needed.</td>
<td>127 3.20 1.42</td>
<td>126 4.27 .99</td>
</tr>
<tr>
<td>26</td>
<td>Kept records of all immunizations and medications given</td>
<td>128 3.12 1.57</td>
<td>127 4.22 1.19</td>
</tr>
<tr>
<td>10</td>
<td>Worked cattle with the understanding of their flight zone</td>
<td>128 3.09 1.55</td>
<td>127 4.57 .75</td>
</tr>
<tr>
<td>17</td>
<td>Followed Beef Quality Assurance guidelines when giving injections</td>
<td>128 3.09 1.45</td>
<td>127 4.63 .82</td>
</tr>
<tr>
<td>20</td>
<td>Designed working facilities to minimize stress on animals and ease movement</td>
<td>128 3.08 1.38</td>
<td>127 4.20 1.06</td>
</tr>
<tr>
<td>8</td>
<td>Developed plan for keeping contagious diseases from entering operation</td>
<td>125 3.03 1.56</td>
<td>124 4.20 1.14</td>
</tr>
<tr>
<td>2</td>
<td>Established controlled/defined breeding season of no more than 120 days</td>
<td>125 3.01 1.55</td>
<td>124 3.98 1.38</td>
</tr>
<tr>
<td>15</td>
<td>Planned crossbreeding to improve economically important traits that are lowly heritable (e.g., reproduction, survival, longevity)</td>
<td>123 2.98 1.48</td>
<td>123 3.80 1.35</td>
</tr>
<tr>
<td>3</td>
<td>Arranged annual breeding soundness exam of herd bulls before the breeding season</td>
<td>125 2.88 1.60</td>
<td>124 3.85 1.42</td>
</tr>
<tr>
<td>14</td>
<td>Used EPDs as tool for selecting herd sires</td>
<td>125 2.81 1.57</td>
<td>124 3.95 1.43</td>
</tr>
<tr>
<td>21</td>
<td>Conducted periodic soil testing on pasture and/or hayfields</td>
<td>127 2.80 1.38</td>
<td>126 3.74 1.25</td>
</tr>
</tbody>
</table>

(table continued)
<table>
<thead>
<tr>
<th>Item #</th>
<th>Cattle Production Practices Before and Participation in the Louisiana Master Cattle Producer Program</th>
<th>Before participation</th>
<th>After participation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>25</td>
<td>Properly prepared seedbed prior to planting a forage crop</td>
<td>125</td>
<td>2.78</td>
</tr>
<tr>
<td>22</td>
<td>Fertilized pastures and/or hayfields according to soil test recommendations</td>
<td>127</td>
<td>2.72</td>
</tr>
<tr>
<td>24</td>
<td>Emphasized hay quality rather than hay production</td>
<td>126</td>
<td>2.70</td>
</tr>
<tr>
<td>1</td>
<td>Pregnancy checked cows on an annual basis and culled non-pregnant cows from herd</td>
<td>126</td>
<td>2.34</td>
</tr>
<tr>
<td>27</td>
<td>Maintained record to calculate cost per head for various production practices</td>
<td>128</td>
<td>2.34</td>
</tr>
<tr>
<td>6</td>
<td>Assessed potential for poisonous plant problems in pastures</td>
<td>128</td>
<td>2.28</td>
</tr>
<tr>
<td>11</td>
<td>Divided cows into groups that have different nutritional requirements and fed accordingly</td>
<td>125</td>
<td>2.23</td>
</tr>
<tr>
<td>23</td>
<td>Incorporated legumes into forage program</td>
<td>127</td>
<td>2.14</td>
</tr>
<tr>
<td>12</td>
<td>Had hay analyzed and fed the highest quality hay to the animals that had highest nutrient requirements</td>
<td>128</td>
<td>1.89</td>
</tr>
<tr>
<td>5</td>
<td>Recorded body condition score (BCS) on each pregnant female approximately 3 months before expected calving date and managed cows so that mature cows calved at BCS = 5 and first-calf heifers calved at BCS = 6</td>
<td>125</td>
<td>1.78</td>
</tr>
<tr>
<td>13</td>
<td>Took advantage of artificial insemination to improve the genetic makeup of herd?</td>
<td>125</td>
<td>1.62</td>
</tr>
<tr>
<td>19</td>
<td>Used a branded beef program to increase market value of cattle</td>
<td>123</td>
<td>1.42</td>
</tr>
<tr>
<td>9</td>
<td>Retained ownership of calves thru the feedlot and took advantage of grid pricing rather than selling them on the hoof</td>
<td>125</td>
<td>1.32</td>
</tr>
<tr>
<td>18</td>
<td>Conducted tenderness DNA test on sires selected for breeding</td>
<td>124</td>
<td>1.23</td>
</tr>
</tbody>
</table>

Summated scale: 107 2.52 .78 105 3.43 .64

Research Question 3: Implementation of Production Practices after Participation

The third research question was to determine the extent that program completers implemented the production practices recommended by the LSU AgCenter in their cattle operation after participating in the Louisiana Master Cattle Producer Program. The results are presented in Table 3.

Responses to the researcher-designed self-perceived adoption section were measured on a five point anchored scale with values as follows: 1 = “Never,” 2 = “Sometimes,” 3 = “Often,” 4 = “Most of the time,” and 5 = “Always.” Means and standard deviations for each item and an overall mean were calculated to summarize the data for this research question. Respondents were asked to provide a rating on 27 recommended production practices that relate to the eight programming areas within the Louisiana Master Cattle Producer Program.

To help facilitate the interpretation of the results of this objective, the researcher established the following interpretive scale: 1 – 1.49 = “Never,” 1.50 – 2.49 = “Sometimes,” 2.50 – 3.49 = “Often,” 3.50 – 4.49 = “Most of the time,” and 4.50 – 5.0 = “Always.” Based on the results of this analysis, the recommendation in which completers of the Louisiana Master Cattle Producer Program perceived that they had the highest level of implementation after participating in the program was, “Followed Beef Quality Assurance guidelines when giving injections” ($M = 4.63$, $SD = .82$) which indicates the respondents always followed this recommendation. The recommendation in which the group had the lowest level of self-perceived implementation prior to participating in the program was “Conducted tenderness DNA test on sires selected for breeding” ($M = 1.42$, $SD = .96$) which indicates the respondents never followed this recommendation. The summated mean of the self-reported implementation of recommended practices was 3.42 ($SD = .64$) which shows that these recommendations were often used after program participation.
Research Question 4: Perceived Value of Training Received by Producers

The fourth research question was to determine the perceived value of training received in each of the eight programming areas to the program completers’ success in the cattle business. Responses to the researcher-designed value of instruction received section were measured on a five point anchored scale with values as follows: 1 = “Very Low Value,” 2 = “Low Value,” 3 = “Moderate Value,” 4 = “High Value,” and 5 = “Very High Value.” Means and standard deviations for each item and an overall mean were calculated to summarize the data for this research question. The results for research question 4 are presented in Table 4.

Table 4. Perceived Value of Training to Success in the Cattle Business by Louisiana Master Cattle Producer Program Training Area

<table>
<thead>
<tr>
<th>Program Area</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Animal Health</td>
<td>4.28</td>
<td>.79</td>
</tr>
<tr>
<td>2. Pasture Management</td>
<td>4.24</td>
<td>.87</td>
</tr>
<tr>
<td>3. Nutrition</td>
<td>4.13</td>
<td>.86</td>
</tr>
<tr>
<td>4. Animal Breeding and Selection</td>
<td>4.10</td>
<td>.84</td>
</tr>
<tr>
<td>5. Animal Handling</td>
<td>4.09</td>
<td>.89</td>
</tr>
<tr>
<td>6. Reproduction</td>
<td>4.07</td>
<td>.82</td>
</tr>
<tr>
<td>7. End Product</td>
<td>3.87</td>
<td>.93</td>
</tr>
<tr>
<td>8. Financial Management</td>
<td>3.70</td>
<td>.86</td>
</tr>
<tr>
<td>Summated scale:</td>
<td>4.05</td>
<td>.71</td>
</tr>
</tbody>
</table>


To help facilitate the interpretation of the results of this objective, the researcher established the following interpretive scale: 1 – 1.49 = “Very Low Value,” 1.50 – 2.49 = “Low Value,” 2.50 – 3.49 = “Moderate Value,” 3.50 – 4.49 = “High Value,” and 4.50 – 5.0 = “Very High Value.” Based on the results of this analysis, the Louisiana Master Cattle Producer Program programming area that was of the highest value to participants was “Animal Health” (M
= 4.27, \( SD = .79 \)). The programming area that had the lowest level of self-perceived value was “Financial Management” \( (M = 3.70, SD = .86 \). The summated mean of the perceived value of the total Louisiana Master Cattle Producer program was 4.05 \( SD = .71 \) which indicates that the program had a high value.

**Research Question 5: Relationship between Recommended Practice Implementation and Selected Variables**

The fifth research question addressed if a relationship existed between the extent program completers in the Louisiana Master Cattle Producer Program implemented the recommended practices for each of the eight programming areas and selected personal and demographic characteristics. Hopkins (1997) descriptors of association were used to describe the correlations. These descriptors included: .90 to 1.00 = “Almost perfect,” .70-.90 = Very large,” .50-.70 = “Large,” .30 - .50 = “Moderate,” .10 - .30 = “Small,” and .00 -.10 = “Trivial.” The data are presented in Table 5.

**Table 5. Relationships between Recommended Practice Implementation Change and Respondent Characteristics**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Recommended Practice Implementation</th>
<th>Before</th>
<th>After</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender(^a)</td>
<td>( r^b )</td>
<td>.160</td>
<td>.026</td>
<td>-.148</td>
</tr>
<tr>
<td></td>
<td>( p )</td>
<td>.100</td>
<td>.794</td>
<td>.131</td>
</tr>
<tr>
<td></td>
<td>( N )</td>
<td>107</td>
<td>105</td>
<td>105</td>
</tr>
<tr>
<td>Interpretation</td>
<td>Trivial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>( r^b )</td>
<td>.077</td>
<td>.121</td>
<td>.009</td>
</tr>
<tr>
<td></td>
<td>( p )</td>
<td>.434</td>
<td>.221</td>
<td>.925</td>
</tr>
<tr>
<td></td>
<td>( N )</td>
<td>106</td>
<td>104</td>
<td>104</td>
</tr>
<tr>
<td>Interpretation</td>
<td>Trivial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education level</td>
<td>( r^b )</td>
<td>.121</td>
<td>.068</td>
<td>-.082</td>
</tr>
<tr>
<td></td>
<td>( p )</td>
<td>.215</td>
<td>.494</td>
<td>.408</td>
</tr>
<tr>
<td></td>
<td>( N )</td>
<td>107</td>
<td>105</td>
<td>105</td>
</tr>
<tr>
<td>Interpretation</td>
<td>Trivial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(table continued)
<table>
<thead>
<tr>
<th>Variables</th>
<th>Recommended Practice Implementation</th>
<th>Before</th>
<th>After</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm size (Number of cattle owned or managed)</td>
<td>$r_{pb}^c$</td>
<td>.213</td>
<td>.108</td>
<td>-.130</td>
</tr>
<tr>
<td></td>
<td>$p$</td>
<td><strong>.033</strong></td>
<td>.286</td>
<td>.199</td>
</tr>
<tr>
<td></td>
<td>$N$</td>
<td>101</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Interpretation</td>
<td>Small</td>
<td>Trivial</td>
<td>Trivial</td>
<td></td>
</tr>
<tr>
<td>Number of years raising cattle</td>
<td>$r^b$</td>
<td>.268</td>
<td>.162</td>
<td>-.151</td>
</tr>
<tr>
<td></td>
<td>$p$</td>
<td><strong>.005</strong></td>
<td>.099</td>
<td>.125</td>
</tr>
<tr>
<td></td>
<td>$N$</td>
<td>107</td>
<td>105</td>
<td>105</td>
</tr>
<tr>
<td>Interpretation</td>
<td>Small</td>
<td>Trivial</td>
<td>Trivial</td>
<td></td>
</tr>
<tr>
<td>Percent of household income generated by cattle operation</td>
<td>$r^b$</td>
<td>.039</td>
<td>-.010</td>
<td>-.030</td>
</tr>
<tr>
<td></td>
<td>$p$</td>
<td>.712</td>
<td>.928</td>
<td>.778</td>
</tr>
<tr>
<td></td>
<td>$N$</td>
<td>91</td>
<td>89</td>
<td>89</td>
</tr>
<tr>
<td>Interpretation</td>
<td>Trivial</td>
<td>Trivial</td>
<td>Trivial</td>
<td></td>
</tr>
<tr>
<td>Farm type$^{de}$</td>
<td>$r_{pb}^c$</td>
<td>.07</td>
<td>.02</td>
<td>-.06</td>
</tr>
<tr>
<td></td>
<td>$P$</td>
<td>.49</td>
<td>.88</td>
<td>.57</td>
</tr>
<tr>
<td></td>
<td>$N$</td>
<td>105</td>
<td>103</td>
<td>103</td>
</tr>
<tr>
<td>Interpretation</td>
<td>Trivial</td>
<td>Trivial</td>
<td>Trivial</td>
<td></td>
</tr>
</tbody>
</table>

Note. Hopkins (1997) descriptors of association were used to describe the correlations. These descriptors included: .90 to 1.00 = “Almost perfect,” .70-.90 = Very large,” .50-.70 = “Large,” .30 -.50 = “Moderate,” .10 - .30 = “Small,” and .00 -.10 = “Trivial.”

$a$1=male, 2=female. $^b$Pearson correlation. $^c$Point bi-serial correlation. $^d$For farm type, there were insufficient completers ($n = 3$) who listed stocker cattle as their type of cattle operation to calculate a correlation coefficient. Therefore, this variable was not included in the correlational analysis. $^e$1 = cow-calf operation, 2 = seed stock operation.

Correlation analyses showed that there were two statistically significant correlations between practice adoption scores and selected personal and demographic characteristics. Both farm size determined by the number of cattle owned or managed ($r_{pb} = .213, p = .033$) and number of years raising cattle ($r = .268, p = .005$) were considered significant but had a “small” effect size according to Hopkins. This indicates that the level of implementation of recommended practices increased as the size of a cattle operation and the number of years raising cattle increased, even though the increase was small. Further review of the data showed that no relationships that existed between any of the other selected personal and demographic characteristics and the recommended practice implementation scores.
Research Question 6: Practice Adoption Score Change after Program Participation

The sixth research question was to determine whether Louisiana Master Cattle Producer Program completers recommended practice adoption score changed from their pre-program score to their post-program score. A paired \( t \)-test was used to analyze the data for this research question (Table 6). The results of this paired \( t \)-test revealed that a highly significant difference existed between the completers practice adoption scores before and after participation \( (t = 13.02, \ p = <.001) \). Cohen’s (1988) descriptors of association were used to describe the effect size: .20 to .39 = “small effect size,” .50-.79 = “medium effect size,” and .80 -up = “large effect size.” A large difference exists between the practice adoption of the completers before participation in the master cattle producer program and their practice adoption after completing this program. This indicated that large gains were made by the completers in their practice adoption.

Table 6. Results of Paired \( t \)-test of the Change in Louisiana Master Cattle Producer Program Completers’ Practice Adoption Scores

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>95% confidence interval of the difference</th>
<th>Cohen’s Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>( M )  ( SD )</td>
<td>Mean</td>
<td>Lower</td>
</tr>
<tr>
<td>Change in practice adoption scores(^a)</td>
<td>.90</td>
<td>.71</td>
</tr>
</tbody>
</table>

Note. \( M \) for practice adoption score before participation in the program was 2.53 \( (SD = .78) \). \( M \) for practice adoption score after participation in the program was 3.43 \( (SD = .64) \).

\(^a\)Difference between practice adoption before training and practice adoption after training.

\(^b\)Cohen’s \( d \) interpretation: .20 to .39 = “small effect size,” .50-.79 = “medium effect size,” and .80 -up = “large effect size.”

According to Garson (2010), Cohen's \( d \) for paired samples \( t \)-tests testing should be used to determine if practical significance exists between the means of two variables which are not
independent of one another. Garson goes on to explain that Cohen’s $d$ can be calculated by dividing the Mean of the difference coefficient by the $SD$ from the same difference coefficient.

**Research Question 7: Completers’ Perceptions of Future Programming Needs**

The seventh research question was to determine the future programming needs of the Louisiana Master Cattle Producer Program completers. Responses to the researcher-designed self-perceived future programming needs in the eight programming area were measured on a four point scale with values as follows: 1 = “No Need,” 2 = “Some Need,” 3 = “Moderate Need,” and 4 = “High Need” (Table 7). If the respondents marked a programming area with moderate or high need for future programming, they were asked to write in the type of specific training they needed. Means and standard deviations were calculated for each item on the scale.

Table 7. Self-perceived Future Programming Needs of Louisiana Master Cattle Producer Program Completers

<table>
<thead>
<tr>
<th>Item #</th>
<th>Program Area</th>
<th>$N$</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Pasture Management</td>
<td>129</td>
<td>2.29</td>
<td>1.11</td>
</tr>
<tr>
<td>2</td>
<td>Animal Health</td>
<td>129</td>
<td>2.19</td>
<td>.95</td>
</tr>
<tr>
<td>4</td>
<td>Nutrition</td>
<td>129</td>
<td>2.19</td>
<td>.99</td>
</tr>
<tr>
<td>3</td>
<td>Financial Management</td>
<td>129</td>
<td>2.13</td>
<td>1.03</td>
</tr>
<tr>
<td>7</td>
<td>End Product</td>
<td>129</td>
<td>1.95</td>
<td>.91</td>
</tr>
<tr>
<td>5</td>
<td>Animal Breeding &amp; Selection</td>
<td>129</td>
<td>1.91</td>
<td>.95</td>
</tr>
<tr>
<td>1</td>
<td>Reproduction</td>
<td>129</td>
<td>1.90</td>
<td>.87</td>
</tr>
<tr>
<td>6</td>
<td>Animal Handling</td>
<td>129</td>
<td>1.64</td>
<td>.83</td>
</tr>
</tbody>
</table>


To help facilitate the interpretation of the results of this objective, the researcher has established the following interpretive scale: 1 – 1.49 = “No Need,” 1.50 – 2.49 = “Some Need,” 2.50 – 3.49 = “Moderate Need,” and 3.50 – 4.00 = “High Need.” Based on the results of this analysis, the programming area in which completers of the Louisiana Master Cattle Producer
Program perceived that they had the highest need for training need after participating in the program was “Animal Health” ($M = 4.27, SD = .79$). The programming area in which the respondents had the lowest level of self-perceived need for training after participating in the program was “Financial Management” ($M = 3.70, SD = .86$). Not all respondents that rated the programming area with moderate or high need for future programming listed a specific type of training needed but it is noteworthy that Animal Health had the most responses and Animal Handling had the lowest number of responses. A full list of the unedited comments from the respondents can be found in Appendix E.
CHAPTER 5: SUMMARY, CONCLUSION, AND RECOMMENDATIONS

This chapter will offer an overview of the purpose and research questions of the study along with a recap of the methodology used in this study. Also, a summary of the research findings will be presented with the conclusions, recommendations, and recommendations for further research.

Purpose and Research Questions

The purpose of this study is to assess the effectiveness of the Louisiana Master Cattle Producer Program as perceived by the program completers. The study was designed to answer the following research questions:

1. What are the personal and demographic characteristics of program completers in the Louisiana Master Cattle Producer Program? The characteristics included in this research question are:
   a. Gender
   b. Age
   c. Education level
   d. Percent of household income generated by the cattle operation
   e. Farm size
   f. Farm type
   g. Number of years raising cattle

2. Did the program completers implemented the production practices recommended by the LSU AgCenter in their cattle operation prior to participating in the Louisiana Master Cattle Producer Program? The eight recommended practices programming areas include: reproduction, animal health, financial management, nutrition, animal breeding and selection, animal handling, end product, and pasture management.
3. To what extent did program completers implement the production practices recommended by the LSU AgCenter in their cattle operation after participating in the Louisiana Master Cattle Producer Program? The eight recommended practice programming areas are listed in research question 2.

4. What is the value of the training received from the Master Cattle Producer Program to the success for program completers in the following areas: reproduction, animal health, financial management, nutrition, animal breeding and selection, animal handling, end product, and pasture management?

5. Determine if a relationship exists between the extent program completers in the Louisiana Master Cattle Producer Program implemented the recommended practices in the eight programming areas (listed in research question 2) and the following personal and demographic characteristics:
   a. Gender
   b. Age
   c. Educational Level
   d. Percent of household income generated by the cattle operation
   e. Farm size
   f. Farm type
   g. Number of years in cattle business

6. Determine if Louisiana Master Cattle Producer Program completers recommended practice adoption score changed from their pre-program score to their post-program score.

7. Determine the Louisiana Master Cattle Producer Program completers perceptions of the future programming needs of the Louisiana Master Cattle Producer Program in the eight programming areas listed in research question two.
Methodology

In order to address the research questions of this study, 236 randomly sampled program completers were selected from the complete list of all program completers (N=440). Names and addresses were obtained from the Beef Specialist. The target and accessible population for this study was defined as all program completers of the LSU AgCenter’s Louisiana Master Cattle Producer Program as of July 1, 2007. The investigator-constructed questionnaire included questions that were developed to accomplish the seven research questions of the study. General and specific questions on practice adoption prior to and after participation, value of instruction received, future programming needs, and demographics were included to determine the completers’ perceptions of the Louisiana Master Cattle Producer Program (See Appendix A).

The survey was distributed to completers via U.S. mail. A cover letter that introduced the selected program completers to the research questions for the study accompanied the questionnaire. Instructions on completing and returning the survey were included in both the cover letter and on the questionnaire (See Appendix B). Return postage and an envelope with complete return mailing address were included. In order to obtain the maximum percentage of questionnaire returns, the following follow-up techniques were used:

1. If the questionnaire was not returned within 14 days after the initial mailing, A second follow-up packet was sent to second-mailing non-respondents. Included in this packet was a second letter emphasizing the importance of responding to the questionnaire and a return addressed postage-paid envelope (see Appendix C).

2. If the questionnaire was not returned within 14 days after the second mailing, a random sample of 25 non-respondents was selected for a telephone follow up to determine if they need another survey and if they would possibly return the survey in a timely manner. It was decided that any survey returned after 6 weeks of the initial mail out would not be considered
in the data analysis. The data from these telephone follow ups were then statistically compared with the data from the respondents to determine if differences occurred. No statistically significant differences were found.

**Summary of Results**

The first research question was to describe certain personal and demographic characteristics of completers in the Louisiana Master Cattle Producer Program. The characteristics included in this research question are: gender, age, education level, percent of household income generated by the cattle operation, farm size, farm type, and number of years raising cattle.

Most of the respondents (\(N = 112, 86.8\%\)) were male. The remainder of the population of respondents (\(N = 17, 13.2\%\)) were female. The mean age of all respondents was 53.1 years old (\(SD = 13.2\)). The age ranged from 18 years to 76 years. The largest group of completers was those who were between the ages of 51 and 60, with 47 completers in this age group (36.6%).

With regards to education the largest group (\(N = 50, 38.8\%\)) of completers indicated that their highest level of education completed was high school diploma or GED. The smallest group (\(n = 2, 1.6\%\)) of completers indicated that their highest level of education completed was some high school.

To determine the level on income received from the production of cattle respondents were asked to indicate a percentage of income to know the amount of total household income derived from cattle production. Responses were then split into ranges of equal parts (25% increments). The majority of producers indicated that they received 0% - 25% of their total household income from cattle production (\(N = 84, 64.6\%\)). Producers who’s total income derived from cattle production ranging between 76% - 100% were the smallest reported group (\(N = 4, 3.1\%\)).
The number of breeding age cows or the number of stocker cattle were used to determine the size of the farming operation for each program completer. Respondents were asked to only give the number of cattle related to the largest type of their operation; Cow-Calf, Stocker, or Seedstock. The majority of producers indicated that they were involved in Cow-Calf operations (N = 115, 89.1%). The least reported operation type of operation was the stocker operation (N = 3, 2.3%). Including all respondents the mean size of the cattle operations was 121.1 cows (SD = 277.5).

The last characteristic the respondents were asked to give was the number of years involved in beef cattle production. Responses were then split into ranges of equal parts (5 year increments). The majority of producers indicated that they had been involved in beef cattle production for 15 – 20 years (N= 19, 14.9%).

The second research question was to determine the extent that program completers implemented the production practices recommended by the LSU AgCenter in their cattle operation prior to participating in the Louisiana Master Cattle Producer Program.

Responses to the researcher-designed self-perceived adoption section were measured on a five point anchored scale with values as follows: 1 = “Never,” 2= “Sometimes,” 3 = “Often,” 4 = “Most of the time,” and 5 = “Always” Means and standard deviations for each item and an overall mean were calculated to summarize the data for this research question. Respondents were asked to provide a rating on 27 recommended production practices that relate to the eight programming areas within the Louisiana Master Cattle Producer Program.

Based on the results of this analysis, the recommendation in which completers of the Louisiana Master Cattle Producer Program perceived that they had the highest level of implementation prior to participating in the program was “Ensured that heifers reached 65% of
expected mature weight before being exposed to a bull for first breeding” ($M = 3.44, SD = 1.37$). The recommendation in which the group had the lowest level of self-perceived implementation prior to participating in the program was “Conducted tenderness DNA test on sires selected for breeding” ($M = 1.23, SD = .73$).

The third research question was to determine the extent that program completers implemented the production practices recommended by the LSU AgCenter in their cattle operation after participating in the Louisiana Master Cattle Producer Program. Responses to the researcher-designed self-perceived adoption section were measured on a five point anchored scale with values as follows: 1 = “Never,” 2 = “Sometimes,” 3 = “Often,” 4 = “Most of the time,” and 5 = “Always.” Means and standard deviations for each item and an overall mean were calculated to summarize the data for this research question. Respondents were asked to provide a rating on 27 recommended production practices that relate to the eight programming areas within the Louisiana Master Cattle Producer Program.

Based on the results of this analysis, the recommendation in which completers of the Louisiana Master Cattle Producer Program perceived that they had the highest level of implementation after participating in the program was “Followed Beef Quality Assurance guidelines when giving injections” ($M = 4.63, SD = .82$). The recommendation in which the group had the lowest level of self-perceived implementation prior to participating in the program was “Conducted tenderness DNA test on sires selected for breeding” ($M = 1.42, SD = .96$).

The fourth research question was to determine the perceived value of training received in each of the eight programming areas to the program completers’ success in the cattle business. Responses to the researcher-designed value of instruction received section were measured on a five point anchored scale with values as follows: 1 = “Very Low Value,” 2 = “Low Value,” 3 =
“Moderate Value,” 4 = “High Value,” and 5 = “Very High Value.” Means and standard deviations for each item and an overall mean were calculated to summarize the data for this research question.

Based on the results of this analysis, the programming area in which completers of the Louisiana Master Cattle Producer Program perceived that they had the highest value of training after participating in the program was “Animal Health” \( (M = 4.27, SD = .79) \). The programming area in which the respondents had the lowest level of self-perceived value of training after participating in the program was “Financial Management” \( (M = 3.70, SD = .86) \).

The fifth research question addressed if a relationship existed between the extent program completers in the Louisiana Master Cattle Producer Program implemented the recommended practices for each of the eight programming areas and selected personal and demographic characteristics. Hopkins (1997) descriptors of association were used to describe the correlations. These descriptors included: .90 to 1.00 = “Almost perfect,” .70-.90 = Very large,” .50 - .70 = “Large,” .30 - .50 = “Moderate,” .10 - .30 = “Small,” and .00 -.10 = “Trivial.” The data are presented in Table 5.

Correlation analyses showed that there were two statistically significant correlations between practice adoption scores and selected personal and demographic characteristics. Both farm size determined by the number of cattle owned or managed \( (r^{pb} = .213, p = .033) \) and number of years raising cattle \( (r = .268, p = .05) \) were considered significant but had a “small” effect size according to Hopkins. This indicates that both the larger the size of a cattle operation and the greater the number of years raising cattle of an individual increased the level of implementation of recommended practices. Further review of the data showed that there were no relationships that existed between any of the selected personal and demographic characteristics,
and the recommended practice implementation scores of the data collected (before, after and the measured change between them).

The sixth research question was to determine whether Louisiana Master Cattle Producer Program completers recommended practice adoption score changed from their pre-program score to their post-program score. A paired $t$-test was used to analyze the data for this research question. The results of this paired $t$-test revealed that a highly significant difference existed between the completers practice adoption scores before and after participation ($t = 13.02, p = <.001$). Cohen’s (1988) descriptors of association were used to describe the effect size: $.20$ to $.39 = “small effect size,” $.50-.79 = “medium effect size,” and $.80 -up = “large effect size.” A large difference exists ($d = 1.26$) between the practice adoption of the completers before participation in the master cattle producer program and their practice adoption after completing this program. This indicated that large gains were made by the completers in their practice adoption.

The seventh research question was to determine the future programming needs of the Louisiana Master Cattle Producer Program completers. Responses to the researcher-designed self-perceived future programming needs in the eight programming area were measured on a four point scale with values as follows: $1 = “No Need,” 2= “Some Need,” 3 = “Moderate Need,” and $4 = “High Need.”

Respondents were also asked if they marked a programming area with moderate or high need for future programming to write in the type of specific training they needed. Means and standard deviations were calculated for each item on the scale.

Based on the results of this analysis, the programming area in which completers of the Louisiana Master Cattle Producer Program perceived that they had the highest value of training
after participating in the program was “Animal Health” ($M = 4.27, SD = .79$). The programming area in which the respondents had the lowest level of self-perceived value of training after participating in the program was “Financial Management” ($M = 3.70, SD = .86$).

**Conclusions**

The first research question was to describe certain personal and demographic characteristics of completers in the Louisiana Master Cattle Producer Program. The majority of the Louisiana Master Cattle Program completers are male with an average age of 53 years and almost all have at least graduated from high school. Furthermore, almost two-thirds of the program completers derive less than 25% of their total household income from beef cattle production with the typical size of the cattle operations being 121 cows, with most of the cattle operations being cow-calf operations.

The second research question was to determine the extent that program completers implemented the production practices recommended by the LSU AgCenter in their cattle operation prior to participating in the Louisiana Master Cattle Producer Program. The production practice that is implemented most often prior to participation in the program “Ensured that heifers reached 65% of expected mature weight before being exposed to a bull for first breeding.” This practice has been stressed for many years by the LSU AgCenter as a way to reduce calving problems and increase calving rates. A relatively new recommended practice is least likely to be implemented prior to participating in the Louisiana Master Cattle Producer Program. That practice is “Conducted tenderness DNA test on sires selected for breeding. This is probably due to the fact that not many producers retain ownership through to slaughter and a premium in is not paid for animals for which this costly test is conducted.

The third research question was to determine the extent that program completers implemented the production practices recommended by the LSU AgCenter in their cattle
operation after participating in the Louisiana Master Cattle Producer Program. It should be noted that a relatively new beef educational program that was recently added to programming efforts in the state was the Beef Quality Assurance Program. The main focus of Beef Quality Assurance is to insure that all completers are aware of and implement practices that insure a safe and wholesome end product. Louisiana Master Cattle Producer Program completers are highly likely to follow Beef Quality Assurance guidelines when giving injections. Program completers are least likely to implement the recommended practice, “Conducted tenderness DNA test on sires selected for breeding,” after completing the Louisiana Master Cattle Producer Program.

The fourth research question was to determine the perceived value of training received in each of the eight programming areas to the program completers’ success in the cattle business. The most valued area of the Louisiana Master Cattle Program is “Animal Health.” It is interesting to note that program completers also perceive that this is the area they need the most for future programming needs. It is also noteworthy that in all areas of the program, “Animal Health” is stressed to all completers as the first priority when assessing their operation and, without properly addressing this issue, a producer would never be able to properly address the other programming areas.

The fifth research question addressed if a relationship existed between the extent program completers in the Louisiana Master Cattle Producer Program implemented the recommended practices for each of the eight programming areas and selected personal and demographic characteristics. Farm size as determined by the number of cattle owned or managed and number of years raising cattle has a low positive relationship with recommended practice adoption scores before participating in the Louisiana Master Cattle Producer Program. No relationships exist between any of the other selected personal and demographic characteristics, and the
recommended practice implementation scores (before and after participation, and the measured change between them). This in itself is very significant as it could be stated that all completers gained knowledge and there is no difference in any completer’s capability to gain knowledge based on their personal and demographic characteristics. This indicates that the Louisiana Master Cattle Producer Program produces improvements in the recommended practice adoption scores for all participants - male or female, young or older, lower educated to highly educated, and small producers to larger producers. Clearly, the Louisiana Cooperative Extension Service has fulfilled its goal of serving a diverse clientele and addressing individual needs and differences in the delivery of this educational program.

The sixth research question was to determine whether Louisiana Master Cattle Producer Program completers recommended practice adoption score changed from their pre-program score to their post-program score. Large gains in recommended practice adoption scores occur after the program completers participate in the Louisiana Master Cattle Producer Program. It is clear that this program is very effective in achieving its goal of educating cattle producers in the area of recommended production practices.

The seventh research question was to determine the future programming needs of Louisiana Master Cattle Producer Program completers. The largest need for future programming is in the area of “Animal Health” and this is also the area of instruction that is valued the highest by program completers.

**Recommendations**

These recommendations are mostly applicable to adult extension programming, especially as it relates to the Master Cattle Producer Program. Other extension programming efforts may also benefit from these recommendations as they review their programming efforts.
This study was an effort to look at the effect of the program on its completers, more precisely, to measure the program’s effectiveness at changing clientele behavior through programming efforts. The data was collected for this study using a “Then/Now” approach in which program completers indicated, after completing the program, their recommended practice adoption before and after completing the program. While the results indicate a large gain occurred in completers’ knowledge, more efforts should be made in the future to more accurately measure knowledge gain with pre- and post-tests to determine pre- and post-program practice implementation. It would also be beneficial to conduct field visits with program completers to ascertain if they are actually implementing the recommended practices and also to determine if there are any unintended consequences of the instruction provided.

Also, follow-up programming and updates that relate to material from this program need to be made available to program completers. In their comments made about future programming needs, many said this was one of the best programs in which they had ever participated. However, they were disappointed that no post-program classes were available for updates or reviews. Many even stated that they would like to retake the Master Cattle Producer Program. A related recommendation is that the Louisiana Master Cattle Producer Program coordinator should maintain an accurate record of all completers over the years for the purposes of providing updated material to completers and also for the purpose of offering additional or more advanced training as needed.

It is further recommended that all programming areas within extension conduct evaluations of the effectiveness of extension programming from the perspective of the participants. The evaluations should include field-based observations and measures of practice adoption. It is also recommended that faculty continue to provide research based practice
adoption information through innovative and quality programs like the Louisiana Master Cattle Producer Program.
REFERENCES


Your answers will be kept confidential. The code number at the bottom of this page is for tracking purposes only. The list matching the code number with your name will be destroyed after the surveys are returned. **By completing and returning this survey, you are agreeing to participate in this study.** We appreciate your cooperation!

### Your Information

**Instructions:** Please provide the following information so that we will have a better idea of your needs based on your personal situation.

1. What is the percent of your household income generated by your cattle operation? ____%  
2. In the left column, indicate the main type of cattle operation that you own (please √ only one response). Then, in the right column, write in the number of cattle you have in your main type of cattle operation. (Check only one blank in the left column. Fill in a number in only one blank in the right column.)  
   - _____ Cow-Calf _____Number of breeding age cows  
   - _____ Stocker _____Number of calves stockered each year  
   - _____ Seedstock _____Number of breeding age cows

3. What is the number of years that you have been in the cattle business? _____ years

4. Gender (√ your response): _____ Male _____ Female

5. What was your age on your last birthday? ____________

6. What is the highest level of education that you have completed? (√ your response)  
   - _____ Some High School  
   - _____ High School Diploma or GED  
   - _____ Technical School or Community College Graduate  
   - _____ College Degree (e.g., B.S., B.A.)  
   - _____ Graduate Degree (e.g., M.S., Ph.D., D.V.M.)
### Instructions:
In Column 1, indicate how often you used each production practice **BEFORE** participating in the Louisiana Master Cattle Producer Program (LMCP). In Column 2, indicate how often you used each production practice **AFTER** participating in the LMCP. Please respond using the following scale:
- Never
- Sometimes
- Often
- Most of the time
- Always

<table>
<thead>
<tr>
<th>Cattle Production Practices</th>
<th>COLUMN 1</th>
<th>COLUMNS 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use of cattle production practices <strong>BEFORE</strong> participating in LMCP</td>
<td>Use of cattle production practices <strong>AFTER</strong> participating in LMCP</td>
</tr>
<tr>
<td></td>
<td>Never</td>
<td>Sometimes</td>
</tr>
<tr>
<td>1. Pregnancy checked cows on an annual basis and culled non-pregnant cows from herd</td>
<td></td>
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<tr>
<td>2. Established controlled/defined breeding season of no more than 120 days</td>
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<tr>
<td>3. Arranged annual breeding soundness exam of herd bulls before the breeding season</td>
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<tr>
<td>4. Ensured that heifers reached 65% of expected mature weight before being exposed to a bull for first breeding</td>
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<tr>
<td>5. Recorded body condition score (BCS) on each pregnant female approximately 3 months before expected calving date and managed cows so that mature cows calved at BCS = 5 and first-calf heifers calved at BCS = 6</td>
<td></td>
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<tr>
<td>6. Assessed potential for poisonous plant problems in pastures</td>
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<tr>
<td>7. Evaluated vaccination program and made changes as needed.</td>
<td></td>
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<tr>
<td>8. Developed plan for keeping contagious diseases from entering operation</td>
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<tr>
<td>9. Retained ownership of calves thru the feedlot and took advantage of grid pricing rather than selling them on the hoof</td>
<td></td>
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<tr>
<td>Cattle Production Practices</td>
<td>COLUMN 1 Use of cattle production practices BEFORE participating in LMCP</td>
<td>COLUMN 2 Use of cattle production practices AFTER participating in LMCP</td>
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<tr>
<td>-----------------------------</td>
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<tr>
<td></td>
<td>Never</td>
<td>Sometimes</td>
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<tr>
<td>10. Worked cattle with the understanding of their flight zone</td>
<td></td>
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</tr>
<tr>
<td>11. Divided cows into groups that have different nutritional requirements and fed accordingly</td>
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<tr>
<td>12. Had hay analyzed and fed the highest quality hay to the animals that had highest nutrient requirements</td>
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<tr>
<td>13. Took advantage of artificial insemination to improve the genetic makeup of herd?</td>
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<tr>
<td>14. Used EPDs as tool for selecting herd sires</td>
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<tr>
<td>15. Planned crossbreeding to improve economically important traits that are lowly heritable (e.g., reproduction, survival, longevity)</td>
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<tr>
<td>16. Based sire selection on strengths of major categories of beef breeds</td>
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<td></td>
</tr>
<tr>
<td>17. Followed Beef Quality Assurance guidelines when giving injections</td>
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<tr>
<td>18. Conducted tenderness DNA test on sires selected for breeding</td>
<td></td>
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<tr>
<td>19. Used a branded beef program to increase market value of cattle</td>
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<tr>
<td>20. Designed working facilities to minimize stress on animals and ease movement</td>
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</tr>
<tr>
<td>21. Conducted periodic soil testing on pasture and/or hayfields</td>
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<tr>
<td>22. Fertilized pastures and/or hayfields according to soil test recommendations</td>
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<tr>
<td>23. Incorporated legumes into forage program</td>
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<tr>
<td>24. Emphasized hay quality rather than hay production</td>
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<tr>
<td>25. Properly prepared seedbed prior to planting a forage crop</td>
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<tr>
<td>26. Kept records of all immunizations and medications given</td>
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</tr>
<tr>
<td>Cattle Production Practices</td>
<td>COLUMN 1 Use of cattle production practices BEFORE participating in LMCP</td>
<td>COLUMN 2 Use of cattle production practices AFTER participating in LMCP</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------</td>
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<tr>
<td></td>
<td>Never</td>
<td>Sometimes</td>
</tr>
<tr>
<td>27. Maintained record to calculate cost per head for various production practices</td>
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</tr>
</tbody>
</table>
**Value of Instruction Received**

**Instructions:** Please rate the value of the Louisiana Master Cattle Producer Program (LMCP) instruction you received to your success in the program areas listed below (√ your response).

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Very low value</th>
<th>Low value</th>
<th>Moderate value</th>
<th>High value</th>
<th>Very high value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reproduction</td>
<td></td>
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<tr>
<td>2. Animal Health</td>
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<tr>
<td>3. Financial Management</td>
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<tr>
<td>4. Nutrition</td>
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<td></td>
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<tr>
<td>5. Animal Breeding and Selection</td>
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<tr>
<td>6. Animal Handling</td>
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<tr>
<td>7. End Product</td>
<td></td>
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<tr>
<td>8. Pasture Management</td>
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</tbody>
</table>

**Your Future Educational Needs**

**Instructions:** Please rate the areas in which you need additional instruction to improve your personal success in cattle production (√ your response).

<table>
<thead>
<tr>
<th>Program Area</th>
<th>No need</th>
<th>Some need</th>
<th>Moderate need</th>
<th>High need</th>
<th>For each area checked (√) as a moderate or high need in the columns on the left, please write in the type of training you need in this column.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reproduction</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. Animal Health</td>
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<tr>
<td>3. Financial Management</td>
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<td>4. Nutrition</td>
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<tr>
<td>5. Animal Breeding &amp; Selection</td>
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<td>6. Animal Handling</td>
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<td>7. End Product</td>
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<td>8. Pasture Management</td>
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</tbody>
</table>

THANK YOU!!! For taking your time to complete & return this survey.

Please return the completed survey in the enclosed envelope to: Louis Lirette/Joe Kotrlik, LSU Mailing Services/Acct 101-60-0000, PO Box 18523, 142 Old Forestry, Baton Rouge, LA 70893-9979
APPENDIX B: FIRST MAILING LETTER

COOPERATIVE EXTENSION SERVICE
West Baton Rouge Parish
230 Turner Road
Port Allen, Louisiana 70767
(225)336-2416
Fax: (225)336-2305
E-mail: wbr@agcenter.lsu.edu
Website: www.lsuagcenter.com

EXTENSION PROGRAMS
Agriculture
Economic/Community Development
Environment/Natural Resources
Families/Nutrition/Health
4-H Youth Programs

(Date)
(Name)
(Address)

Dear (Name):

The LSU AgCenter strives to provide quality research-based information to all citizens of Louisiana through high quality educational programs. As with any governmental agency, the LSU AgCenter is required to evaluate the effectiveness of all of the programs that it provides. We are currently evaluating the Louisiana Master Cattle Producer Program.

We are contacting you because you have completed all requirements of the Louisiana Master Cattle Producer Program. In an effort to determine the effectiveness of this program, we have designed the enclosed survey. The results of the survey will be used to help us determine programming needs related to beef cattle production and to see what can be done to improve the quality of educational programming you receive in the future from the LSU AgCenter’s Cooperative Extension Service.

(Name), we need your help. We are asking you to take 10-15 minutes to complete and return the enclosed survey in the postage-paid envelope provided by Friday, January 15. All responses will be kept completely confidential.

We hope that you will assist us with this important program evaluation and submit your completed survey. Thank you in advance for your cooperation. If you have questions about the survey, please contact me at either 225-336-2416 or liorette@agcenter.lsu.edu.

Sincerely,

Louis Liorette
Associate County Agent
LSU AgCenter

Note: Your privacy will be maintained and your responses will be kept confidential. You will not be identified in any way in research reports or presentations. By completing and returning the enclosed survey, you are agreeing to participate in this study. If you have questions about your rights as a study participant or other concerns, contact Robert C. Mathews, Institutional Review Board Chairman, 130 B-1 David Boyd Hall, (225) 578-8692. (Project 2009-01)

A State Partner in the Cooperative Extension System
The LSU Agricultural Center is a statewide campus of the LSU System and provides equal opportunities in programs and employment. Louisiana State University and A. M. College, Louisiana parish governing bodies, Southern University, and United States Department of Agriculture cooperating.
APPENDIX C: SECOND MAILING LETTER

COOPERATIVE EXTENSION SERVICE
West Baton Rouge Parish
215 Tensas Parish
Port Allen, Louisiana 70767
(225) 336-2416
Fax: (225) 336-2416
E-mail: wrb@agecenter.lsu.edu
Website: www.agecenter.com

EXTENSION PROGRAMS
Agriculture
Economic/Community Development
Environment/Natural Resources
Family/Neighborhood Health
4-H Youth Programs

(Date)

(Name)

(Address)

Dear (Name):

On December 30th, I mailed a survey to you that was designed to measure the effectiveness of the Louisiana Master Cattle Producer Program. As of today I have not received your completed survey. If you have returned it to me in the last few days, thanks. If you have not returned the survey, please complete and return the enclosed survey now.

The LSU AgCenter strives to provide quality research-based information to all Louisiana citizens through high quality educational programs. As with any governmental agency, the LSU AgCenter is required to evaluate the effectiveness of the programs it provides. We are contacting you because you completed all requirements of the Louisiana Master Cattle Producer Program and you have information we need about this program. The results will be used to help us determine programming needs related to beef cattle production and to improve the quality of educational programming from the LSU AgCenter’s Cooperative Extension Service. All responses will be kept completely confidential.

(Name), we need your help. We are asking you to take 10-15 minutes to complete and return the enclosed survey in the postage-paid envelope provided by Friday, January 29. We hope you will assist us by submitting your completed survey. Thank you in advance for your cooperation. If you have questions, please contact me at either 225-336-2416 or lliette@agecenter.lsu.edu.

Sincerely,

Louis Lliette
Associate County Agent
LSU AgCenter

Note: Your privacy will be maintained and your responses will be kept confidential. You will not be identified in any way in research reports or presentations. By completing and returning the enclosed survey, you are agreeing to participate in this study. If you have questions about your rights as a study participant or other concerns, contact Robert C. Mathews, Institutional Review Board Chairman, 120 B-1 David Boyd Hall, (225) 576-8592. (Project 2003-09)
APPENDIX D: INSTITUTIONAL REVIEW BOARD APPROVAL

Application for Exemption from Institutional Oversight

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/projects using human subjects or samples, or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted and is used to request an exemption.

Applicant, please fill out the application in its entirety and include the completed application as well as Parts A-E, listed below, when submitting to the IRB. Once the application is completed, please submit two copies of the completed application to the IRB Office or to a member of the Human Subjects Review Committee. Members of this committee can be found at http://www.lsu.edu/science/humanscience/humanstudyreview.shtml

A complete application includes all of the following:

(A) Two copies of this completed form and two copies of part B thru E.

(B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1 & 2).

(C) Copies of all instruments to be used.

*If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment materials.

(D) The consent form that you will use in the study (see part 3 for more information).

(E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB. Training link: (http://php.nihtaining.com/users/login.php)

1) Principal Investigator:_________________________________________ Ph: (225) 281-0474

Student: Y/N

Dept: ___________________________________________ Ph: (225) 578-5753

E-mail: Brette@agscenter.lsu.edu

2) Co-investigator(s): please include department, rank, phone, and e-mail for each

Dr. Joe W. Kooff, James C. Atherton Alumni Professor of Human Resource Education

3) Project Title: Participants' Perceptions of the Effectiveness of the LSU Master Livestock Producer Program

4) Proposal? (yes or no) Y N

If yes, LSU Proposal Number

Also, if yes, either

☐ This application completely matches the scope of work in the grant

☐ More RRB applications will be filed later

5) Subject pool (e.g. Psychology students) Adults

*(Indicate any "vulnerable populations" to be used: children < 18, the mentally impaired, pregnant women, the ages other). Projects with incarcerated persons cannot be exempted.

6) PI Signature: ___________________________ Date: 12/3/2009

**I certify my responses are accurate and complete. If the project scope or design is later changed, I will resubmit for review. I will obtain written approval from the Authorized Representative of all RRB institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms for at least three years after completion of the study. If I leave LSU before that time, the consent forms should be preserved in the Departmental Office.

Screening Committee Action: Exempted X Not Exempted Category/Paragraph

Reviewer: ___________________________ Signature: ___________________________ Date: 12/17/2009

Part 1: Determination of "Research" and Potential For Risk

This section determines whether the project meets the Department of Health and Human Services (DHHS) definition of research involving human subjects, and if not, whether it nonetheless presents more than "minimal risk" to human subjects that makes IRB review prudent and necessary.
APPENDIX E: SELF-REPORTED EDUCATIONAL NEEDS OF PROGRAM COMPLETERS BY PROGRAMMING AREA

Note: The self-reported educational needs listed below have been typed exactly as they were written by the respondents, including grammatical and spelling errors.

Reproduction
- More information on Artificial Insemination, with possible demonstration.
- More information on EPD’s and their use in beef production.
- How to reduce calving problems.
- More palpation and AI hands on training.
- New information on synchronization protocols for AI.
- Information on embryo transfer and its use in today’s market.
- Hands on lessons to learn how to AI cattle.
- DNA testing benefits and cost.
- Conduct a hand’s on palpation and AI school.
- Methods to increase calving percent.
- Need more info on conducting and administering pelvic exam.
- Continue to stress the importance of nutrition plays on success with reproduction.
- Information to reduce the number of 1st time breeding failures.
- Information on the proper time to breed for marketing and increased value of cattle.
- More information on the breeding cycle of beef cattle.

Animal Health
- Remedial training to learn what is new would be a big help.
- Information on Holistic treatment of animals.
- More information on worming calves vs. time of weaning.
- Annual vaccinations: when, what and why.
- Major conditions to be aware of, signs of these conditions and the proper procedures to handle the condition.
- Information on the diagnosis of various disease and sickness that affect beef cattle.
- New and up to date info on current vaccines.
- Proper methods to fix prolapsed animals.
- Information on controlling parasites, especially worms in yearlings.
- Information on new health problems that pop-up in essential areas and control methods for these problems.
- New information on new medications and vaccinations.
- Information in new vaccinations and disease prevention.
- More information on effects body condition have on health and updates on disease threats.
• A more extensive and up to date program on current health issues.
• Parasite control in wet and dry conditions.
• Info on new medications and procedures.
• Information on the use of probiotic and antiviral medications.
• More information on precondition vaccines and comparisons of the different ones.
• Current disease and management practices.
• Practices to reduce the incidents of foot rot.
• New vaccines and their uses.
• Updates on new vaccines and their worth.
• Information on new vaccines and their uses.

Financial Management
• How to make a higher valued end product
• More realistic worksheets for the small farmer or programs that address their needs.
• Information on tax laws and suggestions on better bookkeeping and record keeping practices.
• Better understanding of cost of production system. As I see it there is no profit margin to be made in the current economic condition for a cow/calf producer. The high input cost of fertilizer, fuel, and equipment are causing more producers to go out of business every day.
• Training on the use of computer record keeping programs and databases.
• Information on looking for other ways to get better returns as cost continue to climb and profit margins seem to get smaller.
• Ways to cut cost to afford fertilizer and lime at is ever increasing price.
• Information on cost reduction, beef production is cost prohibitive, having trouble staying in business.
• More information on accounting practices that beef producers need to practice.
• Information on general financial practices.
• Info on cash flowing operation with ever increasing input cost.
• New and innovative ways of marketing cattle.
• Better methods for record keeping and financial management.
• More information to better understand concepts when selling cattle such as (slides, shrink, and types of sales).
• Information on the cost vs. return for each recommended practice.

Nutrition
• What are the best feed stuffs to use in our area to get that most return for investment.
• Sample diets for calves and bulls to insure proper development.
• More information on calculating lowest cost diets for the use of local commodities.
• Updates on recommendations for nutritional requirements.
- Information on the various types of supplemental feeds and when they become economically feasible.
- Information to better understand what the mineral requirements for cattle are and do those requirements change during different times of the year.
- Requirements needed to be successful at rotation grazing small paddocks.
- Methods to incorporate byproducts into feeding programs and better utilization of forage though proper feeding of harvested forages.
- A more extensive and up to date program on nutrition requirements and different ways to meet those needs.
- Training to meet nutritional needs at a least cost method.
- Info on the best winter feed selection to meet nutritional needs.
- When preconditioning feedlot calves, what are the advantages and disadvantages of using stockpiled forage vs. baled hay?
- Stress how proper nutrition increases production.
- New low cost feed supplements.
- New sources for low-cost supplements.
- Information on how to calculate feed energy, and the digestive system functions.

Animal Breeding and Selection
- Information on breeds that do best on grass fed beef operations.
- More information on heat and insect tolerant breeds and their market value.
- Info on breed selection and the benefits of certain breed characteristics.
- Marketing your product based on your breed selection.
- Benefits of changing operation from seedstock production to commercial cow-calf operation.
- Benefits to out-crossing cattle.

Animal Handling
- Information on proper facility design.
- Methods to reduce stress on cattle to increase gain and reduce shrinkage during transport.
- Info on pen design that allows animal handling to be done by one person to reduce the need for extra labor.
- Better designed working facilities.
- Refresher on animal handling to reduce injuries while working cattle.

End Product
- Need more information on how to market my product and the best times and places to get more value.
- Info in marketing purebred and commercial cattle to increase value.
- Training on what consumers want and need, possible niche markets.
• Marketing cattle outside of Louisiana to bypass sending to stockyard and their lower prices.
• Look at and implement ways for a small operation to bring up the end value of animals sold through various marketing strategies.
• How to better market my cattle as a small breeder.
• Locate other markets for cattle other than local stockyard.
• More information on the risk and reward of retaining ownership.
• More recent info on the consumer trends and current market needs.
• Information on the proper time to market cattle to maximize profit.

Pasture Management
• More training needed on pasture management to get that best grass for your dollar
• Need more information on what to plant for various soil types and low cost upkeep.
• More information on indigenous plants (sometimes called weeds) and their value as feed.
• More information on managing pasture fertility, including timing of and those application methods for proper fertilizer and lime applications.
• Testing methods and sampling procedures to collect forage samples.
• More information, recent finding s on control of weeds.
• Information on the possibility of producing fewer cattle on pastures in fertilizer applications are reduced or eliminated.
• Pasture tours to various farms that implements proper forage management practices to visualize the concepts.
• Better production tips to meet nutritional requirements strictly from pastures.
• More information on weed control.
• Low cost weed control and alternatives to chemical fertilizers such as chicken litter.
• Weed and fertilizer management under Grassland Reserve Program.
• More info on the identification of poisonous plants.
• Information on starting new pastures for previously unused land.
• More information on the summer legume system.
• Info on weed control.
• Continue to stress the importance proper pasture management has on reducing financial cost and increasing available nutrition.
• How to manage pastures and lower inputs to reduce cost.
• Best low-cost fertilizer to apply to summer pastures.
• Information on how to keep per acre input cost at a minimum.
• Information on weed control, legume establishment, and grass varieties that can expand grazing periods.
General

- In addition to the Master Cattle Producer Program I have received certification in the Master Farmer Program. These some of the area are covered in both programs but address it in different ways.
- The Louisiana Master Cattle Producer Program on the whole is very good. I do thank all of you for the time that you put in to it and for all that you continue to do for the small producers.
- Great Program! We would also like to see additional programs related to small farms (ex. Agro-Tourism, gardening, financial management, and other AgCenter programs.
- Excellent Program! Highly recommend it to anyone with livestock.
- Thinking of getting out of cattle business – Totally! Cattle prices are too low and input costs have not stopped going up.
- Everybody can use a little more knowledge. Thanks!!
VITA

The author was born in Houma, Louisiana, and is the son of Lee Roy Lirette Jr. and Sonia Lirette. Louis grew up in Houma and graduated from Central Lafourche High in 1997. He received his Bachelor of Science degree from Louisiana State University in 2002 with a major in agriculture education. During his time at LSU, Louis worked for the LSU AgCenter Central Research Station Swine Unit. After graduation, he was a high school agriculture teacher for one year and Coordinator of Workforce Development for 9 months at Baker High School. In 2003, Louis married Rebecca Luke and they have two sons, Luke born in 2004 and Eli born in 2006.

On April 14, 2004, Louis accepted the position of assistant county agent 4-H/ANR (agricultural and natural resources) for Iberville Parish. On July 1 2006, he was assigned as a full-time ANR sugarcane agent for Iberville, West Baton Rouge, and Pointe Coupee Parishes and was also chosen as parish chair of West Baton Rouge Parish Extension. On July 1, 2008, Louis was promoted to associate county agent. His work assignment for the three parishes mostly involves row crop and animal educational programs for adult audiences with an emphasis on sugarcane and youth livestock programming.

Louis is an active member and treasurer of the Louisiana County Agriculture Agents Association (LCAAA). In 2009, he was awarded the Achievement Award from the LCAAA which recognizes early career achievement.