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AN EVALUATION OF THE NEWSLETTER “BEEF CATTLE TIME” – DETERMINING THE IMPACTS OF “BEEF CATTLE TIME” AS PERCEIVED BY TENNESSEE BEEF PRODUCERS

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To the Graduate Council:

I am submitting herewith a thesis written by Christina L. Perez entitled "AN EVALUATION OF THE NEWSLETTER “BEEF CATTLE TIME” – DETERMINING THE IMPACTS OF “BEEF CATTLE TIME” AS PERCEIVED BY TENNESSEE BEEF PRODUCERS." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agriculture and Extension Education.

Randol G. Waters, Major Professor

We have read this thesis and recommend its acceptance:

Jim B. Neel, Carrie A. Stephens

Accepted for the Council:
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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A Thesis Presented for
the Master of Science
Degree
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Christina L. Perez
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Dedication

I wish to dedicate this study to my family who has been there for me through the good times and the bad. Thank you for all you have done in my life. If it weren't for your support, love, and faith I couldn't have accomplished all that I have.

Acknowledgements

I want to extend my many thanks to the following individuals for their help in making this degree possible. To my major professor, Dr. Waters, for his guidance and patience through the whole process from start to finish. I couldn't have accomplished this without him. To Dr. Jim Neel, for his never ending words of encouragement and inspiration, and for always making time for me. To Dr. Carrie Stephens, for her help and support. To April Strickland and Darlene King, for providing me assistance with the mail out of the surveys.

I wish to thank the Extension Program Leaders in Tennessee for their support and cooperation in helping me secure the lists needed for the study and the extension agents and beef producers throughout Tennessee who provided me with the information needed.

Abstract

This study examined the impacts of a beef cattle newsletter, "Beef Cattle Time," on Tennessee beef producers. The purpose of this study was to assess the impacts of "Beef Cattle Time" as perceived by Tennessee beef producers on the utilization, satisfaction, benefit, and future of this newsletter. A self-developed, seventy-six question, survey was mailed to 639 randomly selected Tennessee beef cattle producers. Two hundred seventy six (43%) participants responded. One hundred thirty-four (48.6%) reported reading "Beef Cattle Time" and 142 (51.4%) had never read "Beef Cattle Time."

The utilization of "Beef Cattle Time" as a source of information was found to be used less than other sources of information by all respondents. The most popular source was that of cattle and farm magazines. Those beef producers who read "Beef Cattle Time," were quite satisfied with it as a publication, and it was considered to be beneficial to those producers who did read it. Beef cattle producers did want to see "Beef Cattle Time" continue into the future.

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Chapter 1

INTRODUCTION

Since 1974, the Department of Animal Science at the University of Tennessee has produced "Beef Cattle Time," a quarterly newsletter. Its purpose is to provide the beef cattle producers of Tennessee with useful and practical information that can be applied to either improve or sustain their operations. Each issue of the newsletter features between four and six articles, written by extension faculty, which address topics for cattle producers dealing with a variety of beef related issues. These topics range from forage production and herd health to marketing and reproduction.

The newsletter is published and distributed to Tennessee beef producers by county extension offices. Producers receive this newsletter four times during the year; spring, summer, fall, and winter. "Beef Cattle Time" format consists of four pages, with two columns per page. The distribution of the newsletter began primarily as a mail out to the counties of Tennessee and then in the winter of 2001 became accessible on line. Approximately 21,000 copies are distributed quarterly and about 84,000 are distributed yearly.

Need for the Study

"Beef Cattle Time" has been distributed quarterly to the beef cattle producers of Tennessee since its inception in 1974. For 36 years, its distribution is still on-going; however there has been no evaluation on its impacts as perceived by the cattle producers of Tennessee. The newsletters purpose was to disseminate useful and current information to the cattle producers. By assessing the producers' perceptions of the newsletter the information gathered from this study will aid in determining the success and future of „Bœf Cattle Time."

Purpose of the Study

The purpose of this study was to assess the impacts of "Beef Cattle Time" as perceived by Tennessee beef producers. In order to determine these impacts, a survey was developed and mailed out to Tennessee beef producers to determine the utilization, satisfaction, benefits, and future of "Beef Cattle Time." The specific objectives were as follows:

1. To describe, demographically, Tennessee beef producers who read "Beef Cattle Time;"
2. To determine the utilization of "Beef Cattle Time" by Tennessee beef producers;
3. To determine the level of satisfaction of Tennessee beef producers with "Beef Cattle Time;"
4. To determine the benefits of "Beef Cattle Time" identified by Tennessee beef Producers; and
5. To determine the future of "Beef Cattle Time" as perceived by Tennessee beef producers.

Limitations of the Study

1. Not all Tennessee beef producers had the opportunity to participate in the survey.
2. The survey used in this study did not allow us to communicate to the producers on a "one on one basis." It was more of an impersonal attempt rather than a personal one.
3. Not every producer selected to participate in the study had access to "Beef Cattle Time."

Chapter 2

REVIEW OF LITERATURE

Newsletters Defined

The following chapter contains information about the purpose of newsletters, the reason for their evaluation, the factors that contribute to the success of newsletters as well as criteria used to determine the impact of newsletters. Further it describes the beef cattle producers' preference for sources of information as well as the type of beef cattle information they seek. Also, described in this chapter is the Cooperative Extension Service and their ways of distributing information to their audiences such as the beef producer.

Bivins (1992) stated "A newsletter can be said to be any typically small-format, print publication that purports to deliver timely news and information to a limited target audience in a fairly perishable format, quickly, inexpensively, and with little effort" (p. 1). According to ("The UT Extension," 2009) a newsletter is "material designed for targeted audiences, produced on a regular schedule (quarterly, semi-annually, etc.)" (p. 4). According to Nelson (1993) newsletters are, "read fast; the content is usually thought of as superior to other sources of information; and they're written in a comprehensible fashion" (p. 14).

Newsletters serve many types of people with different interests. Nelson (1993) stated "Newsletters are used to target *specific* readership" (p. 14). For example, newsletters can be used on college campuses for the purpose of fostering career development in college students (Mitchell, 1988), as a way of providing education to the food stamp eligible audience by providing and improving nutrition habits (Harmon et al., 2007), or to help avoid child neglect and abuse, and to encourage good parenting by educating parents during their child's first few years of life (Baumgertner et al., 2000).

Many different types of organizations, large or small, should have a newsletter in order for its members to stay abreast of information as well as to share it (Matz, 2006)**.** According to Anthony and Rennie (1989) "Newsletters can contain very current information which may be needed quickly, and due to the narrow subject coverage can contain news items not likely to be reported in periodicals of a more general nature" (p. 24). Newsletters are also intended for quick turnover (Bivins, 1992, p. 7). Newsletters continue to be well accepted by people because of their many flexible uses (Bruhn, 1999).

History of Newsletters

The account of newsletters dates back to the 1500s ("A Short History," 2003). According to (Bruhn, 1999 & Hudson, 1982), the first known newsletter was believed to have been introduced by a man named Phillip Edward Fugger of Augsburg, Germany between the years 1546-1618. This newsletter "reported on business news gathered by trade centers around Europe and oversees" (Bruhn, 1999, p. 2). The first American newsletter in North America was the "*Boston News-Letter*, published in 1704, followed by the first business newsletter, called the *South Carolina Current*, in 1774" (Bruhn, 1999, p. 2). Newsletters began to resurface again in the 1900s because specialized information was needed for industries and businesses ("A Short History," 2003). According to, Hudson (1982) "Business and financial people showed an interest in the opinions of people with expert knowledge, and in forecasts of what might happen to their investments" (p. 1). One of the first newsletters of the 1900s which accomplished this need was Babson's Report in 1904, an investment advisory newsletter (Hudson, 1993). In 1930 corporate newsletters began growing along with a variety of other newsletters ranging from farming to fashion ("A Short History," 2003).

It wasn't until the 1980s that newsletters became more accessible and were produced more easily. With the introduction of computers and software, newsletters were produced more efficiently. According to Bruhn (1999) "With the evolution of desktop publishing, almost anybody, with a computer and certain resources, can produce newsletters" (p. 3). Beginning in the 21st century, newsletters began showing up on the web as on line newsletters allowing them to be viewed instantaneously and delivered more efficiently to the reader (Bruhn, 1999).

Purpose of a Newsletter

According to (Matz, 2006; Blair, 1997 & Nelson, 1993) the purpose of a newsletter is to inform. Newsletters can inform people about events or programs that will be taking place in the near future (Matz, 2006). Another purpose of a newsletter is to educate people. Newsletters serve a great educational purpose (Nelson, 1986; Dickinson & Cudaback, 1992; Bogenschneider & Stone, 1997; Garton et al., 2003 & Nelson, 1993). Friedman (1992) stated "Educating the readers should be the main goal in any good newsletter" (p. 91). For example, a gardening newsletter could contain information on new equipment and techniques as well as new cultivars (Matz, 2006). It can also serve as a parent education method seeking to encourage good quality parenting for adolescent children (Bogenschneider & Stone, 1997). It can even strengthen marriages (Futris, Bloir, & Szu-Ying Tsai, 2005).

Communicating specialized information is another very important purpose of newsletters. Newsletters contain specialized information for its selected readers (Fanson, 1994 & Hudson, 1982). Hudson (1982) stated "Newsletters give you specialized information you can't get from newspapers, radio, television, or magazines – information you need to coordinate your activities and interests" (p. ix). Hudson (1982) added, "People today want more specific information about their interests" (p. 5). Newsletters also tend to cover narrow and countless amounts of

topics. Bruhn (1999) said newsletter themes range from "health issues to auto body repair; from Harley Davidson to doll collecting" (p. 4). Newsletters are used more and more as a dependent source of information by people with special interests (Nelson, 1993).

Finally, newsletters target specific audiences. A number of clubs and small and large organizations throughout the nation use newsletters to communicate with members. Clubs and smaller organizations are using newsletters as a communication tool more frequently (Bruhn, 1999). Hudson (1982) stated "Newsletters are used within corporations, associations, labor unions and various non-profit organizations as a fast method of communication." (p. ix). Matz (2006) stated "A club or any organization of any size needs a newsletter as a way for the group and its members to stay in touch and share information" (p. 2). Minter (1989) added "Newsletters can be an effective, targeted communication tool for almost any organization" (p. 30). Many people look for ways to share their knowledge and interest in a certain subject or field with others and newsletters are an effective medium to accomplish this (Blair, 1997). What makes the newsletter significant is that it contains information that may be difficult to find from time to time in other places (Bond, 1992). Some of these specific audiences may be hard to reach who may not be able to attend different functions. According to Minter (1989) "Newsletters provide a routine channel of communication to narrowly targeted audiences that are often unavailable through any other medium" (p. 30).

Advantages of Newsletters

Newsletters can make readers aware of new information. Broussard & Floress (2007) stated "Newsletters can create or increase awareness, provide basic information, or create a sense of stability and commitment for a project" (p.1). Nelson (1993) also agreed that a newsletter can be used to create awareness of a need.

Newsletters are also versatile. Their versatility lies within the ability to be produced with ease and also to target either large or small audiences (Bivins, 1992). The ease of production of the newsletter deals with the simplicity of the design as well as layout which comes from its standard format of 81/2" x 11" page (Bivins, 1992). Newsletters are also versatile because they can provide timely information. Newsletters communicate information in a quick and brief way (Bruhn, 1999). Blair (1997) stated, "In today's society, a newsletter gives information to people in an optimal way; it provides short, collected segments of timely information" (p. 13).

Disadvantages of Newsletters

While newsletters have many advantages they also have limitations. Newsletters are impersonal (Riley et al., 1991). How can a newsletter have any impact with so many different problems and needs circulating nowadays in the world? According to Riley et al. (1991) if a newsletter has an effect, "It will most likely be evident as an average change accrued across the large numbers of people who receive the newsletter, and especially among those who have the greatest need for the newsletter information" (p. 248). Another down fall of newsletters is that when people receive them, they are often scanned for certain information and not fully read, therefore, the reader does not obtain all the information he or she is intended to obtain. According to Broussard and Floress (2007) "People tend to scan newsletters for interesting information bites or local news, and don't read the whole thing" (p. 1) so, although effective at conveying new ideas or general concepts, they are probably not the best vehicle for technical or highly detailed information" (p. 1). While newsletters are designed to be kept they are still considered disposable (Bivins, 1992). Broussard and Floress (2007) also stated that, "Because of time constraints, newsletters may not be the best way to communicate up-coming events" (p. 1).

A Successful Newsletter

According to previous newsletter evaluation research there are certain key variables that can determine the success of a newsletter. According to Matz (2006) in order to be successful a "newsletter must have meaningful content, be attractive, informative, and have good eye appeal" (p. 2).

Layout and design

Variables impacting success include layout and design (Blair, 1997 & Bruhn, 1999). According to Blair (1997) font size and color of ink and paper are important for the success of a newsletter. According to psychological tests, the best combination for newsletters is black on yellow paper (Blair, 1997, p. 16). Sosnin (1996) stated readership of a newsletter can increase significantly if it is attractive. Also, since newsletters are many times read on the go, it is important that the layout be clear and eye catching (Hamilton, 1996). The design of the newsletter must add to its content (Bond, 1992). Another important claim is that when stories are written in one or two short paragraphs, readership will be at its highest (Hamilton, 1996). Nelson (1993) agreed saying "Attracting your readers with many short, snappy articles breaks monotony and reader-fatigue and makes it easier for the readers to read everything in your newsletter at a faster pace" (p. 115). Something to go along with attracting the reader is using "captivating subheads, captions and callouts" (Nelson, 1993, p. 124). Some people tend to skim newsletters starting from the third page and then work their way to the front (Sherman, 1997) while others read the first page first (Fanson, 1994). It is important to remember that readers turn to the page where the most eye appealing factor is (Fanson, 1994). Nelson (1993) also offered a copy-guideline checklist that helps ensure short and to the point articles. These questions include:

1. Does the newsletter copy grab your readers in one to three seconds? 2. Does the newsletter copy lead your readers where you want them to go, forming the conclusions you want them to form? 3. Is your newsletter copy both brief and interesting? 4. Is your newsletter copy informative and pertinent? 5. Does your newsletter offer readers an easy way to respond if you want them to? 6. Does your newsletter copy convey reliability and engender trust in your product? (Nelson, 1993, p. 110).

Content

Blair (1997) and Bruhn (1999) felt content was very important for a successful newsletter. Blair (1997) felt that writing is also important for the success of a newsletter. When there are mistakes in the content a newsletter can lose its credibility (Blair, 1997). For example you want everyone receiving the newsletter to be able to read it. Studies show that the typical reader reads at a seventh grade level (Fanson, 1994). For a newsletter to be read and accepted it is also important that it contain useful and meaningful information as well as intriguing stories so the readers interest is sparked **(**Sosnin, 1996). According to Fanson (1994), "The ten most common reasons newsletters aren't read" include:

1. Unattractive 2. Boring headlines that don't offer benefits 3. Too much type and not enough art 4. Not distributed to the right audience 5. Typographical errors

6. Writing style does not suit readership 7. Articles do not interest the reader

8. Looks too amateurish and isn't taken seriously 9. Lacks "color" or graphics

10. Uninteresting and ineffective articles (Fanson, 1994 p. 25).

Format

The format of a newsletter is also another area of importance for success (Bruhn, 1999 & Bivins, 1992). Format has to do with the size of paper, column width, number of columns on

each page and the location of information from most important to least important (Bruhn, 1999, p. 41-42). According to Bond (1992) "Newsletters should be composed of the following design elements: Text and display, size and number of pages, format (number of columns, indentations of paragraphs, spacing on page), photographs, stapled single sheets or folded paper" (p 83). Bivins (1992) defines format of a newsletter by its size and cover design.

Frequency

Other things that contribute to the success of newsletters includes: availability and frequency (Anthony & Rennie, 1989). Frequency has to do with the number of times a newsletter is distributed in a year (Bivins, 1992). When publishing a newsletter too frequently, it can defeat the purpose of a newsletter and leave your readers overwhelmed (Bivins, 1992). Distribution also leads to the success of newsletters. Bruhn (1999) stated "Newsletters very often become the first publishing choice because of their variation of distribution" (p. 2). Newsletters can be distributed in many different ways and forms to be more accessible to the reader. Blair (1997) and Bruhn (1999) felt distribution method were important for a successful newsletter. Distribution method is very important because if the audience of the newsletter is not being reached it can lose its credibility and will not be respected (Blair, 1997). Newsletters should be reliable (Hamilton, 1996).

According to Minter (1989) "Any successful publication program starts with a well-planned publishing strategy that takes into account issues of purpose, audience, content, frequency, format, and distribution" (p. 30). If newsletters don't focus on content, frequency, format and distribution they could end up composting in an "I-will-get-to-it-someday" stack (Minter, 1989**,** p. 30). To determine the successes of a newsletter you need to make sure it is

consistent because without consistency the newsletter might be perceived as unreliable (Nelson, 1993).

Evaluation of Newsletters

With the large number of newsletters in circulation, there has been little evaluation of their acceptance (Davis, 1990). Broussard and Floress (2007) stated "There are difficulties in thoroughly evaluating impacts of newsletters alone and the effort may not be worth the cost and time and other resources. Broussard & Floress (2007) acknowledged that "low response rates and challenges in defining the effects of a newsletter are but two of these obstacles" (p. 1-2).

Without an evaluation there is no way to know if newsletters are fulfilling their purpose or doing what they were intended. The question to present is: Are these newsletters actually being accepted, read and used? The only way to answer this is to survey the readers, in other words ask the readers (Hudson, 1982). According to Sosnin (1996) a readership survey will help in determining the feelings of the audience to the publication and what selections are actually being read. Readership surveys also help to determine what is working, and what isn't working as well as what part of the layout needs to change, including article topics (Sosnin, 1996). Also by conducting a readership survey, readers are also able to give suggestions on what they might want in the publication (Hudson, 1982). By conducting readership surveys every year, one is able to keep focus of their publication (Fanson, 1994). Asking questions about content, as well as demographic information are important to include in a survey (Fanson, 1994). According to Bond (1992) some questions one can ask in an evaluation of a newsletter are as follows: Does the reader enjoy the newsletter, is it easy to read, does the reader receive new and useful ideas (p. 49).

An evaluation of a newsletter is needed in order to determine its effectiveness (Bivins, 1992). Without an evaluation the publisher will never know if the intended audience was reached. According to Kiernan (2001) it is a good idea to evaluate a newsletter in two different stages: the first evaluation should determine the audience's acceptance of the newsletter by asking questions about the readability, relevancy and readership (Tipsheet # 21). Then the second stage is to evaluate the impact of the newsletter (Kiernan, 2001, Tipsheet #21). By evaluating in two stages Kiernan (2001) believes that you can better understand your newsletter and know what areas you need to fix before the second evaluation, plus, it can help improve the newsletter and gain better data about impact (Tipsheet #21). Also according to Kiernan (2001) caution should be taken when mailing surveys to older citizens. Studies showed that age does present considerable impact on response rates when questionnaires are mailed, as the rate of responses tend to decrease as age extends over 65 (Tipsheet #48). While this is an issue, there are some things you can do to prevent low response rates with this population (Tipsheet # 48). These include: oversampling, gathering age of target audience before hand, performing a personal interview, or completing a telephone survey (Kiernan, 2001, Tipsheet #48).

Determining the Impacts of Newsletters

Demographics

Surveys include a number of criteria to ultimately determine the impacts of a newsletter. Lancaster (1997) used variables such as appearance, interest in content and interest in future issues to evaluate an elderly nutrition newsletter. Another variable Lancaster (1997) used was demographic information. The variables such as age, education level, gender, race, living situation, and perceived income level were used in the survey in order to provide information about the respondents. The respondents were asked to provide information about themselves that

could influence their response to the newsletter (Lancaster, 1997). For example, a newsletter study conducted by Riley, et al. (1991) concluded that the level of education impacts the readership of a newsletter. The lower the education level the less likely a newsletter will be read.

Utilization

Researchers use criteria such as utilization and usefulness of newsletters to determine impacts. Zimmer et al's. (2006) newsletter evaluation study measured the utilization and usefulness of a state-wide 4-H volunteer newsletter on 4-H volunteers and 4-H Extension staff. The study provided the following findings: the newsletter was utilized and considered a valuable resource, 4-H staff wanted the newsletter to continue, and the overall usefulness of the newsletter was either very useful or useful (Zimmer et al., 2006). When asked what the readers most often did with the newsletter the majority said they read it and used its ideas or read it and filed it for future use (Zimmer et al., 2006). In another study that assessed the impact of a newsletter, Lauckner & Singh (2003) stated that respondents should be asked, "Whether other members of the household read the newsletter and also whether the newsletter is passed on to others outside the household" (p. 105). They said the reason for these types of "Questions is that a printed information product is often read by many more persons than the initial recipient and any evaluation of impact should attempt to measure this" (Lauckner & Singh, 2003, p. 105).

Satisfaction

Satisfaction is another criterion which can be used to assess the impacts of a newsletter (Kiernan, 2001, Tipsheet #43). In a readership survey conducted by Woodbury (1988) a survey was developed with questions regarding reader satisfaction and interest "with specific contents and preferences about quantity and subject of published articles in the Canadian Veterinary Journal (CVJ)" (p. 889). The respondents' satisfaction level was determined by asking questions

about the quantity of articles, rating of regularly occurring features in the journal, and what they thought about the major subject categories (Woodbury, 1988). The survey found that there was a general satisfaction with the CVJ, also "most articles and subject categories were widely read, and satisfied the majority of the readers" (Woodbury, 1988, p. 889). According to Woodbury (1988) "Ranking features by level of interest may be useful to editors wanting to know the relative interests of the readership so that effective alterations can be made to the journal" (p. 894), also the level of interest ranking for each regular feature frequently corresponded with its rank for average level satisfaction of those regularly reading the article (p. 894). Woodbury (1988) said "If reader satisfaction is an indication of quality, then the higher the quality of the feature, the higher is the number of subscribers who read it" (p. 894). He added, "Retrospectively, it is probable that level of interest and average level of satisfaction were equivalent measures of reader contentment" (Woodbury, 1988, p. 894).

Benefits

Newsletters can have the largest impacts when they provide benefits to the reader. These benefits can consist of a change in behavior and even change in knowledge or attitude. In an evaluation study of a childrearing newsletter, Baumgartner et al. (2000) found, "Most parents reported that reading the newsletters caused them to change their childrearing behaviors in six key areas" (p. 1). For example, parents were able to explain and describe specific changes in their childrearing practices that they attributed to reading the newsletters (Baumgertner et al., 2000, p. 1). Lauckner and Singh (2003) also stated that in a newsletter impact survey it is important to find out what information was learned, however, they did not try to measure the "final impact" (p. 109) of the newsletter on the reader because, "Information disseminated via newsletters by itself is unlikely to have long term effects" (p. 109) and so "the information may

sensitize or create an interest to do something that may require additional (more specific and detailed) information of the type that could properly inform business decisions" (p. 109). Futris et al., (2005) evaluated a marital enrichment newsletter on the criteria of changes in knowledge, attitudes and behaviors to assess the impact of the newsletter on the readers. Some questions in the survey included: What new information was learned after reading the newsletter, did readers feel more confident after reading the newsletter, and did the reader use the information in their relationships. The results concluded that a large percentage of the readers reported positive changes in knowledge, attitude and behaviors. A finding from this study found that there was a positive benefit for those readers who read more articles in the newsletter.

Much of this newsletter evaluation research caters to different categories of people except agriculturalists. This tells us that there is not much newsletter evaluation research conducted with agricultural audiences. Despite this, there is research that shows agriculturalists need for information.

Agricultural Producers' Information Needs

One of agriculture's most valuable resources is that of information (Maddox, 2001). Production, marketing, and financial information are what farmers and professional farm manager's value when making decisions (Patrick & Ullerich, 1996; Schnitkey, 1992). Lawrence and Schuknecht (2005) concluded that the top research priority for cow-calf and feedlot owners was cattle health, while the top education priority for cow-calf and feedlots was genetic selection (Priorities, para. 1). More specific information needs of farmers and ranchers consist of animal nutrition, animal health, markets, management, technology, and genetics and reproduction (Foltz et al., 1996; Murphy, 1960).

Sources of Information Used by Agriculturalists

Agricultural producers depend on information when going through the decision making process (Ortmann, Patrick, Musser, & Doster, 1993). Recent studies show that print sources have been receiving a high preference as information sources by agriculturalists (Gloy, Akridge, & Whipker, 2000; Maddox, 2001; Suvedi, Campo, & Lapinski, 1999). One of these print sources is magazines. The magazines that these agricultural audiences look for are the magazines that contain information on management, production practices and policy (Ford & Babb, 1989; Jones et al., 1979; & Ortmann et al., 1993). Farmers and ranchers use many sources of agriculture media to meet their information needs. According to Lawrence & Schuknecht (2005) feedlot and cow-calf operators designate newsletters and trade magazines as their most important source of management information while Television and radio was the most important source for marketing information (Priorities, para. 2). According to Lawrence and Schuknecht (2005) one source that was rated very poorly was electronic delivery such as internet and email (Priorities, para. 2). Lawrence & Schuknecht (2005) believed that "The unfavorable acceptance of internet delivery has implications as universities, governments, and industry move to more dependence on the internet to reduce delivery costs" (Priorities, para. 2). According to Patrick and Ullerich (1996) producers rated other producers as their main source of information for making marketing and production decisions. According to Vergot III et al. (2005) beef cattle producers place a large amount of significance on information sources in the order of county extension agents, other cattle producers, veterinarians, local farm supply dealers and university specialists. Beef cattle producers also place county extension newsletters, cattle or farm magazines and extension bulletins as a high source of information (Vergot III et al., 2005). In a study conducted by Clement, Richardson, & Mustian (1995) it was concluded that beef cattle

producers prefer to receive extension information in this order: newsletter, bulletin/pamphlet tied with personal visit, field day and method demonstration. A research study conducted by Obahayujie & Hillison (1988) found that part-time cattle farmers preferred personal visits and demonstrations and full-time cattle farmers preferred newsletters, bulletins, radio and pamphlets. As concluded by (Clement et al., 1995 & Vergot III et al., 2005) beef producers utilize The Cooperative Extension Service to help them make decision on their operations.

Extension Methods for Distributing Information

The mission of The Cooperative Extension Service is to help "improve people's lives through educational processes which use scientific knowledge focused on issues and needs" (Rassmussen, 1989, p. 4). Extension continues its mission of spreading agricultural information and utilizes a variety of methods to distribute information to its selected audiences (Orr, 2003). These methods include: publications, programs, factsheets, meetings, newsletters, magazines, bulletins etc. Aflakpui (2007) believed that extension is viewed as a linkage system that disseminates information and knowledge to the people. Some of the ways in which "information and knowledge can be disseminated include publications, reports, demonstrations, field days, audio-visual aids, training, seminars and workshops" (Aflakpui, 2007, p. 37).

The Cooperative Extension Service produces publications that discuss a variety of information. For example, these publications discuss issues such as; managing a small family chicken flock (Lyons, 1997), how to create a garden pond for wildlife (Lamb & Allen, 2002) or how to communicate with your teen (Devereaux, 2006). Fact sheets are also a large source of information for the extension audience. One of the Ohio State University Extension factsheets provides information on the praying mantis (Lyon, 1998). This sheet informs on the basic

information on how to identify them, their lifecycle habits, rearing mantis and how to control them.

Newsletters are another source of information extension produces for their audiences. These newsletters are timely and full of useful information for the agricultural audience, family, couples, 4-H clubs, etc. Some of the genres of newsletters extension produces include: Parenting newsletters (Garton et al., 2003), 4-H volunteer newsletters (Zimmer et al., 2006) and beef cattle newsletters (Olson, 2009).

Conclusion

Newsletters are a great form of communication information that is used to target *specific* readership (Nelson, p. 1, 1993). Their topics range from poultry production, beef cattle management, childrearing and doll collecting. Since their beginnings in the 1500s and through their circulation into the twenty-first century newsletters have served their purpose of informing, educating, and promoting. Newsletters also provide their audience with many advantages. Newsletters supply current and up to date information to the reader in a timely fashion as well as provide focused information. These advantages satisfy the reader, making them want to continue receiving and reading them. Newsletters however, also have limitations. Newsletters are impersonal, short, and sometimes lengthy and invalid which can make or break a newsletter, and influence the reader to reject it.

With the number of newsletters in circulation there is a chance that all are not accepted by their audience, therefore evaluation is needed in order to eliminate those that are not successful, but more so to determine if those newsletters are being accepted, read and used. Readership surveys are an excellent way to evaluate the effectiveness of a newsletter because they determine what sections the audience is reading and enjoying as well as find out the benefits

received from the newsletter. When evaluating a newsletter through a survey there are many things that need to be considered. It is important to determine the newsletter evaluation criteria and variables that will be used in the survey. For example, there are studies that stress the need to evaluate newsletters on certain variables such as appearance, format and design, accuracy, length of articles, etc. Criteria are needed to group these variables so the evaluator can determine the impacts of the newsletter. Some of these newsletter evaluation criteria include: utilization of the newsletter, satisfaction level of the newsletter, and benefits gained.

Based on the current research there is a lack of newsletter evaluations being conducted on agriculturalists. Agriculturalists thrive on information and need it in order to maintain their operations; however, it is not known if producers are getting the information needed or if the information they receive is helpful. Cattle producers depend on information such as genetics, health, and nutrition. Some sources of information that producers use are magazines, extension publications, newsletters, programs and brochures. The Cooperative Extension Service is responsible for providing their audience with useful and practical information that can be used in their daily lives. Tennessee beef cattle producers in particular receive much of their information from the University of Tennessee Extension.

Chapter 3

METHODOLOGY

The purpose of this study was to evaluate the impacts of "Beef Cattle Time" as a source of information, perceived by Tennessee beef producers. In order to determine these impacts, a survey was developed and distributed to Tennessee beef producers to determine their demographics, utilization, satisfaction, benefits and future of "Beef Cattle Time." The following information discusses the steps that were taken to conduct this study.

Population and Sample

The population for this study was Tennessee beef producers. The sampling frame was derived from the 2007 Census of Agriculture – County Data Sheet which highlighted the number of beef cow operations in each Tennessee county. According to the 2007 Census of Agriculture, there were 42,344 beef cow operations in Tennessee. Based on the population size, it was determined that a sample size of 700 should be secured to reach 95% confidence intervals. The researchers hoped for a 60% response rate with an oversample of 300 to achieve the desirable response of 400. Once 700 was determined for the sample size, the number of participants per county was determined. To determine this, the number of beef operations per county was distributed proportionally over the total number of operations in Tennessee. After this mathematical equation was performed for each county the final sample size totaled 703. The number of producers determined for each county was a good representation of the percentage of operations in each county in relation to the total number of Tennessee cow- calf operations in Tennessee (See Appendix A). Ninety four out of Tennessee's 95 counties were included in the study. Lake County was excluded due to the fact that virtually no beef cattle producers were located in that county.

Selection Process of Beef Producers

A meeting was requested to gain cooperation and support from the three Regional Agricultural Extension Program Leaders in Tennessee prior to contacting extension agents to collect names and addresses of producers. This meeting allowed the Program Leaders to provide any input they thought might impact the study. Instead of mailing letters to each agent in Tennessee to inform them of the study and request a list of their beef producers, as initially proposed, the Program Leaders suggested a letter to the agent along with the survey and cover letter to producer be attached and emailed to them. They would then forward the email to their agents in their designated counties informing them of the study and asking them to electronically submit their mailing lists of beef producers to the researchers. This method made for a quicker response.

A letter to the extension agent (See Appendix D) and cover letter to the beef producer (See Appendix B) was drafted and e-mailed along with the completed survey (See Appendix E) directly to the Program Leaders. The documents were then forwarded to the agents asking for their cooperation and to send an electronic copy of their list of beef producers with names and addresses to the researchers. As the beef producer lists were received, random selections of producers were performed using the designated numbers pre-determined for each county. The selection process of producers was carried out using a random numbers generator from the website www.http://random.org. This method assured each producer from each county had an opportunity to be chosen for the sample. After the initial email was sent out there were four subsequent emails sent the following four weeks by the Extension Program Leaders reminding the agents to electronically send their lists.

Before the lists of producers were received a spreadsheet and notebook was set up to keep track of all the counties who had sent in their lists of producers. Included in the spreadsheet was the county name, the producer's name, the mailing address and a number used to identify that particular producer. This number included the extension region number, the county number and the survey identification number. The spreadsheet was numbered from 1-703 for the number of surveys to be distributed. A copy of the beef producers lists sent from the agent was maintained for verification purposes.

Survey Design

A survey was developed to be distributed throughout the counties to selected beef producers. Studies similar to this one were not found, so the development and design of the survey began with research from previous newsletter evaluation studies as well as sample surveys that had been conducted throughout extension. The different parts of the instrument were developed using a combination of previous extension surveys, extension tip sheets, and surveys from previous newsletter evaluation studies. The survey was prepared into an 8.5" x 11" bi-fold brochure for easier mail out and the cover contained the "Beef Cattle Time" logo for familiarity. The color of the brochure was a bright color which was intended to stand out from white sheets of paper.

Part I of the survey collected demographic data of the producers. These questions helped identify the producer as an individual based on: age, number of years in the beef industry, education, size of operation, farming status, the number of acres included on their operation, whether they had been through the Tennessee Master Beef Producer Program and if they were members of the Tennessee Cattlemen's Association.

Part II of the survey collected information on the utilization of the newsletter. The first section contained statements available for the producer to check based on how they utilized the newsletter. The second section used a five point Likert-type scale to find out other sources of information producers utilized to get their information.

Part III asks questions about the satisfaction level of producers with "Beef Cattle Time." Using a five point Likert-type scale the producers could rate their level of satisfaction on a number of satisfaction statements.

Part IV of the survey measured the benefits producers gained from reading "Beef Cattle Time." This objective was divided into two sections. The first section to this objective used a five point Likert-type scale for producers to rate their overall benefit received from the different beef management practice articles read. The second section also used a five point Likert-type scale to determine the overall personal benefit producers gained from reading "Beef Cattle Time."

Part V allowed for the producers to write down their thoughts and opinions which would help in determining the future of "Beef Cattle Time."

Access to "Beef Cattle Time"

While the sample was stratified by county, it was not known if every producer selected to participate in the study received "Beef Cattle Time." Therefore, in case a producer who did not read "Beef Cattle Time" received a survey, they were instructed to only answer specified questions in the survey and return it. This helped in determining the percentage of producers who were not receiving "Beef Cattle Time." Despite, their lack of knowledge of "Beef Cattle Time," their responses helped to identify other information sources they used in the absence of "Beef Cattle Time" as well as if they would like to receive newsletters in the future.

There are multiple ways for producers to access the newsletter. "Beef Cattle Time" is distributed to sale barns and agricultural businesses. It is also mailed to producers by the extension agents. "Beef Cattle Time" is also accessible on the University of Tennessee Extension Animal Science website and available for pick up at the University of Tennessee Extension Office. Some agents do not mail the newsletters because of lack of funding, but distribute them during meetings and other beef producer events.

Pilot Test

The initial survey was reviewed first by University of Tennessee faculty of the Department of Animal Science and the Department of Agricultural Leadership, Education, and Communications. Appropriate modifications to questions were made based on recommendations from the faculty members. The survey was pilot tested to confirm the validity and reliability of the survey instrument using a small intact group of beef producers attending a Master Beef Producer Class in Greene County. The survey along with the cover letter to the producer was administered to the producers and returned prior to the start of the meeting. Of the 30 surveys distributed 26 were completed and returned. Minor revisions were made to the survey to clarify producer questions and comments.

Survey Distribution

Identification numbers were assigned to each survey to help keep track of those producers who responded. This number was written at the top right corner of the survey. The numbers were obtained from the spreadsheet containing the list of selected producers. Enclosed in each mail out packet was the cover letter to producers, the survey, and a stamped, return envelope for return. Four weeks from the initial mail out, a hot pink colored postcard was mailed out thanking those who had responded and a friendly reminder to those who had not (See

Appendix F). A week later a second letter (See Appendix G) along with a questionnaire and a stamped, return envelope was mailed to non-respondents again urging them to complete the survey.

Data Collection

The goal of this study was to examine the impacts of "Beef Cattle Time" on beef cattle producers in Tennessee. The survey included five sections: demographics, utilization, satisfaction, benefits, and the future of beef cattle time. The surveys were mailed to a random sample of beef cattle producers in 94 out of the 95 counties in Tennessee. Out of the 94 counties, 86 beef producer lists were submitted from the counties. Two mailings of the surveys to producers were made. The first mail out included, 639 surveys. We were unable to access the remainder of the planned sample of 703 because several extension agent directors did not send their mailing lists to the researchers, thus making the accessible sample 639. Once, the surveys returned from the first mailing were accounted for, 462 surveys were mailed out since all 639 didn't come back to the researchers. Following the second mailing, 99 surveys came back. As there were two mailings, the respondents during the first mail out were considered early responders and late responders were those producers who returned surveys after the second mailing. This study is based on the response of 276 producers from 80 counties, a 43% response rate. Even though the response rate was lower than expected, the information provided was still valid. The percentages of surveys returned from each region were still proportional to the percent of cow-calf operations per region (See Table 1). Further evidence to support these findings comes from the fact that the western region contains the lowest number of beef cattle operations of the three regions in Tennessee. There is also more focus on row crops in the western region. In the Central region of Tennessee, beef cattle operations are most prevalent

Table 1

Rate of Return of Surveys for All Three Extension Regions in Tennessee in Relation to the Percent of Cow-Calf Operations in Each Region

Variables	Western Region	Central Region	Eastern Region	Total
Number of surveys sent	141	267	231	639
Number of returned surveys	54	122	100	276
Percent of returned surveys	38%	46%	43%	*
Number of beef cattle operations	8,807	17,007	16,530	42,344
Percent of Tennessee cow-calf operations by region	21%	42%	39%	*

*All percentages total 100% when summing up all decimals.

because of the focus on cattle production. In the Eastern into the eastern region, the number of beef operations slightly decreases, yet still producing more cattle than the Western region. This information was reviewed by a beef cattle extension specialist who concluded that this was a valid representation of the beef cattle operations in Tennessee, therefore, a valid sample of data.

Table 1, reported the Western region (West Tennessee) returned 54 (38%) surveys with 8,807 (21%) cow-calf operations in the region. The Central region (Middle Tennessee) returned 122 (46%) surveys with 17,007 (42%) cow-calf operations in the region, and the Eastern region (East Tennessee) returned 100 (43%) surveys with 16,530 (39%) cow-calf operations in the region.

Statistical Analysis

This study's purpose was to determine the impacts of "Beef Cattle Time" on those producers who read it, however, not all respondents read beef cattle time. Of the 276 who responded, 134 (48.6%) reported reading "Beef Cattle Time" and 142 (51.4%) had never read "Beef Cattle Time." These percentages were determined by reviewing the responses from survey question 14, "How do you receive "Beef Cattle Time." Those who answered this question were readers of "Beef Cattle Time" and those who didn't were non-readers.

The data was analyzed using the Predictive Analytics Software for Windows (PASW) formerly known as the Statistical Package for the Social Science (SPSS). Descriptive Statistics were used to analyze the results. Initially, for each objective, a frequency distribution was calculated to check for means and standard deviation. Other PASW analysis used to test and analyze relationships were the Chi-square test, t-test and Analysis of Variance. A Cronbach's Alpha was also used to determine the internal consistency of certain sections of the survey that constituted attitudinal scales. Since sufficient numbers desired were not reached, an analysis of

differences between early and late respondents was used to determine if response bias existed because according to Miller & Smith (1983) if there is no difference between early and late respondents on key variables, it increases the likelihood that late respondents are like non-respondents and the information can therefore be generalized. When considering these findings plus those alluded to above from a demographic analysis conducted by researchers and the extension beef specialists, it was concluded that findings from the responding sample in this study may be used to generalize to the broader population from which it was drawn.

Part five of the survey contained open-ended questions regarding the future of "Beef Cattle Time." In the analysis of part five, the responses from each of the four available questions were reviewed. The responses to each individual question were analyzed independently from each other. The surveys were then grouped according to common, reoccurring themes which were subsequently recorded on a note pad. Then the grouped responses that supplemented each theme were documented and maintained in the data set.

Chapter 4

FINDINGS

This chapter consists of the findings from the study as they relate to the five objectives: demographics, utilization, satisfaction, benefits, and future. It is important to note that out of the 276 respondents, only 134 (48.6%) read "Beef Cattle Time" while 142 (51.4%) didn't. Objective two will be analyzed using both readers as well as non readers.

Objective 1

The purpose of objective one was to describe, demographically, Tennessee beef producers who read "Beef Cattle Time." This objective was divided into two sections. First, the entire group of respondents was described on all demographic variables. Second, a statistically significant relationship between readers and non-readers was described using a Chi-square test. The data describing producer characteristics are presented in Table 2. These characteristics included:

1. Age
2. Level of education attained
3. Number of years in beef production
4. Type of beef cattle operation
5. Farming status
6. Computer ownership
7. Internet access
8. Member of the Tennessee Cattlemen's Association

Table 2

Characteristics of Tennessee Beef Producers

Characteristics	Frequency	Percent (%)	Valid Percent (%)
Age			
20-29	9	3.3	3.4
30-39	21	7.6	8.0
40-49	40	14.5	15.3
50-59	61	22.1	23.3
60-69	78	28.3	29.8
70 and over	53	19.2	20.2
Non response	14	5.1	
Level of education attained			
High School/GED or below	99	35.9	37.9
Some college	57	20.7	21.8
Bachelor's Degree	70	25.4	26.8
Master's Degree or above	35	12.7	13.4
Non response	15	5.4	
Number of years in beef production			
Less than 10 years	38	13.8	14.4
10-19 years	37	13.4	14.0
20-29 years	46	16.7	17.4
30-39 years	52	18.8	19.7
40-49 years	43	15.6	16.3
50 or more years	48	17.4	18.2
Non response	12	4.3	
Type of cattle operation			
Cow-calf	215	77.9	*
Stocker	26	9.4	*
Purebred	41	14.9	*

* "Valid percentages" and "percentages" are equal for these variables since there were no missing data.

Table 2 (Continued)

Characteristics of Tennessee Beef Producers

Characteristics	Frequency	Percent (%)	Valid Percent (%)
Farming status			
Full-time	64	23.2	24.6
Part-time	147	53.3	56.5
Retired	49	17.8	18.8
Non response	16	5.8	
Computer ownership			
Yes	195	70.7	73.9
No	69	25.0	26.1
Non response	12	4.3	
Internet access			
Yes	178	64.5	77.1
No	53	19.2	22.9
Non response	45	16.3	
Member of Tennessee Cattlemen's Association			
Yes	137	49.6	52.7
No	123	44.6	47.3
Non response	16	5.8	
Graduate or currently enrolled in Tennessee Master Beef *Producer Program*			
Yes	144	52.2	55.4
No	116	42.0	44.6
Non response	16	5.8	

* "Valid percentages" and "percentages" are equal for these variables since there were no missing data.

Table 2 (Continued)

Characteristics of Tennessee Beef Producers

Characteristics	Frequency	Percent (%)	Valid Percent (%)
Size of beef operation (Head)			
0-25	99	35.9	38.1
26-50	80	29.0	30.8
51-95	37	13.4	14.2
96-100	10	3.6	3.8
101-150	18	6.5	6.9
151 and over	16	5.8	6.2
Non response	16	5.8	
Size of beef operation (acres)			
Less than 100	100	36.2	38.2
100-200	81	29.3	30.9
201-400	36	13.0	13.7
401-600	24	8.7	9.2
601 or above	21	7.6	8.0
Non response	14	5.1	
How do you receive "Beef Cattle Time"			
Mail from extension agent	125	45.3	*
Bulletin rack in extension office	3	1.1	*
UT Animal Science website	3	1.1	*
Livestock sale barns	3	1.1	*
Businesses	2	.7	*
Do not receive BCT	140	50.7	

* "Valid percentages" and "percentages" are equal for these variables since there were no missing data.

9. Current size of beef operation (acres)
10. How do you receive "Beef Cattle Time"

Age of producers

As reported in Table 2, of the 276 beef producers surveyed, 9 (3.3%) producers were between 20-29 years of age, 21 (7.6%) were between 30-39 years of age, 40 (14.5%) between 40-49 years of age, 61 (22.1%) between 50-59 years of age, 78 (28.3%) between 60-69 years of age, 53 (19.21%) producers were 70 years old and over, and 14 (5.1%) chose to not respond.

Level of education attained

For the level of education attained by beef producers, out of the 276 respondents, it was reported that, 99 (35.9%) received a high school/ GED or below, 57 (20.7%) completed some college, 70 (25.4%) obtained a Bachelor's Degree, 35 (12.7%) obtained a Master's Degree or higher, and 15 (5.4%) chose to not respond.

Number of years in beef production

From the 276 producers surveyed, 38 (13.8%) had less than 10 years experience in the beef industry, 37 (13.4%) had 10-19 years experience, 46 (16.7%) had 20-29 years experience, 52 (18.8%) had 30-39 years experience, 43 (15.6%) had 40-49 years experience, 48 (17.4%) had 50 or more years experience and 12 (4.3%) chose to not respond.

Type of cattle operation

The next question regarded the type of cattle operation. Of the 276 producers who responded 215 (77.9%) operated a cow-calf operation, 26 (9.4%) operated a stocker operation and 41 (14.9%) operated a purebred operation. All producers responded to this question, however, some producers owned more than one type of operation.

Farming status

Of the 276 producers surveyed, 64 (23.2%) farmed full-time, 147 (53.3%) farmed part-time, 49 (17.8%) were retired, and 16 (5.8%) chose to not respond.

Computer ownership and internet access

Of the 276 producers surveyed, 195 (70.7%) of producers responded "yes" to owning a computer, 69 (25.0%) responded "no" and 12 (4.3%) chose to not respond. Out of the 276 producers who responded to internet access 178 (64.5%) responded "yes" to having internet access, 53 (19.2%) responded "no" and 45 (16.3%) chose to not respond.

Member of Tennessee Cattlemen's Association

Out of the 276 respondents 137 (49.6%) responded "yes" to being a member of the Tennessee Cattlemen's Association, 123 (44.6%) responded "no" and 16 (5.8%) chose to not respond.

Graduate or currently enrolled in the Tennessee Master Beef Producer Program

Of the 276 producers surveyed 144 (52.2%) responded "yes" to being a graduate or currently enrolled in the Tennessee Master Beef Producer Program, 116 (42.0%) responded "no" and 16 (5.8%) chose to not respond.

Size of operation (head)

Of the 276 producers who responded to the survey, 99 (35.9%) of producers had less than 25 head of cattle, 80 (29.0%) had 26-50 head, 37 (13.4%) of producers had 51-95 head, 10 (3.6%) of producers had 96-100 head, 18 (6.5%) had 101-150 head, 16 (5.8%) had 151 and over, and 16 (5.8) chose to not respond.

Size of operation (acres)

Of the 276 producers surveyed 100 (36.2%) producers had less than 100 acres, 81 (29.3%) had 100-200 acres, 36 (13.0%) had 201-400 acres, 24 (8.7%) 401-600 acres, 21 (7.6%) had 601 or more acres, and 14 (5.1%) chose to not respond.

How do you receive "Beef Cattle Time?"

Of the 134 producers who read "Beef Cattle Time", 125 (45.3%) producers receive "Beef Cattle Time" as mail from the extension agent, 3 (1.1%) receive the newsletter from bulletin rack in extension office, 3 (1.1%) from the UT Animal Science website, 3 (1.1%) from livestock sale barns and 2 (.7%) from businesses.

Readership and its relationship to demographic characteristics of all respondents

To better understand the readership of "Beef Cattle Time" the researchers conducted an analysis of all demographic variables to determine if readers differed significantly from non-readers. Of the 12 demographic variables studied only one, education, significantly related to readership. Table 3 describes that relationship. As reported in Table 3, those with a Master's Degree, or higher were most likely to read "Beef Cattle Time," while those with less than a Master's Degree were more similar in their decision to read or not to read the newsletter (Chi-square = 7.91, phi = .174, df = 3, p = .048). There were no other significant differences found in demographic characteristics by readership.

Table 3

The Relationship Between the Level of Education Attained and "Beef Cattle Time" Readership

	Level of Education Attained							
	High School/GED or below		Some College		Bachelor's		Master's or higher	
Readership	N	%	N	%	N	%	N	%
Yes	48	48.5	24	42.1	35	50.0	25	71.4
No	51	51.5	33	57.9	35	50.0	10	28.6
Total	99	100	57	100	70	100	35	100

Statistics: Chi-square = 7.91, phi = .174, df = 3, p = .048

Objective 2

Utilization of "Beef Cattle Time" on readers

The purpose of objective two was to determine the utilization of "Beef Cattle Time" by Tennessee beef producers. The discussion of this objective contained four sections. The first section described the *readers'* response to utilization statements (See Table 4). As reported in Table 4, of those who read "Beef Cattle Time" only 1 (.70%) producer throws the newsletter away without reading it, 1 (.70%) gives it to another beef producer without reading it, 36 (26.90%) skim through it, 56 (41.80%) read parts only applicable to them, 50 (37.30%) read the whole thing, 32 (23.90%) read it and put it on file, 45 (33.60%) read it and put the information to use, 7 (5.20%) give it to another beef producer after reading it and 46 (34.30%) throw it away after reading it. Producers were given the opportunity to check more than one statement therefore this description is a reflection of some producers who might have responded to more than one statement.

Overall utilization of "Beef Cattle Time" on readers

In an effort to determine how" heavily" *readers* utilized "Beef Cattle Time," a utilization score was computed based on the utilization statements. The first seven statements were ordinal statements available for the producers to check. Note there were a total of 9 responses available to be checked, however, only the first 7 were used and the last two excluded because they didn't fit the scale when assigning weights to the statements. The remaining seven statements were identified and each assigned weights. The first available statement weighted a 0, the second statement 1, the third statement 2, the fourth statement 3, the fifth statement 4, the sixth statement 5 and the seventh a 6.

Table 4

Description of How Readers Utilize "Beef Cattle Time"

Uses of "Beef Cattle Time"	Frequency *	Percent (%)
Throw away without reading it	1	.70
Give to another producer without reading it	1	.70
Skim through it	36	26.90
Read articles applicable to me	56	41.80
Read the whole thing	50	37.30
Read it and file it	32	23.90
Read it and put the information to use	45	33.60
Give to another producer after reading	7	5.20
Throw away after reading	46	34.30

* Frequency represents the number of responses each statement received.

Combined, the weighted sum of these variables could range from 0-21 with a mid-point of 10.5. A score of 0 meant that there was no utilization of the newsletter and 21 meant there was full utilization of the newsletter. The utilization score was determined based on the number of checks each of the seven statements could receive. The actual computed utilization score for respondents ranged from 2-16 with a mean of 7.08 and a standard deviation of 3.92.

Relationship between "Beef Cattle Time" utilization score and selected demographic variables

The second section of objective two tested the relationships between the computed "Beef Cattle Time" utilization score described above and five selected independent demographic variables which included:

1. Age
2. Type of beef cattle operation
3. Farming status
4. Member of Tennessee Cattlemen's Association
5. Graduate or currently enrolled in the Tennessee Master Beef Producer Program

A t-test was used to test inferentially the relationships between the computed utilization score and three of the five independent demographic variables which were: type of operation, Tennessee Cattlemen's Association membership, and graduate or currently enrolled in the Tennessee Master Beef Producer Program. An Analysis of Variance was used to describe the relationship between the computed utilization score with: age and farming status, since these two nominally scaled variables had more than two levels. Of the five independent variables studied, only type of operation, membership in the Tennessee Cattlemen's Association, and participation in the Tennessee Master Beef Producer Program, were significantly related to the level of utilization of "Beef Cattle Time."

As reported in Table 5, owners of cow-calf operations utilized "Beef Cattle Time" more heavily than non-cow-calf operators ($t = -2.57$, $df = 121$, $p = .011$). There were no differences in the level of utilization for owners and non-owners of stocker operators or purebred operators.

As reported in Table 6, those producers who were members of the Tennessee Cattlemen's Association utilized "Beef Cattle Time" more heavily than those who were non-members of the Tennessee Cattlemen's Association ($t = 2.15$, $df = 119$, $p = .033$).

According to the findings in Table 7, those producers who were either graduates or currently enrolled in the Tennessee Master Beef Producer Program also utilized the newsletter more heavily than those who were not a part of the Tennessee Master Beef Producer Program ($t = 2.01$, $df = 120$, $p = .046$).

Utilization of "other sources of information" on readers and non-readers

The third section of objective two was to describe the frequency distributions of how *readers and non-readers* utilized "other sources of information" to make management decisions on their operations. A five-point Likert-type scale was used to allow respondents to indicate to what level they utilized "other sources of information." Table 8, provides the results of the analysis of "other sources of information" used by Tennessee beef producers. As reported in Table 8, utilization scores for all sources of information ranged from a low of 1.56 (private consultants) and 1.82 (agricultural teachers) to a high of 3.47 (cattle or farm magazines) and 3.45 (other cattle producers), with "Beef Cattle Time" receiving an average of 2.60, well below the rating of other cattle or farm magazines, but higher than 8 of the 18 possible alternatives. Those sources rated as being utilized most (at or above an average rating of 3.00) included:

1. Extension meetings (3.00)
2. Other beef cattle newsletters (3.03)

Table 5

The Relationship Between Utilization Score of "Beef Cattle Time" and Type of Cattle Operation

	Utilization Score *	
Cow-Calf Operation	**Mean ****	**Standard Deviation**
Yes	7.50	3.93
No	5.18	3.30

t = -2.57, df = 121, p = .011

* Utilization score could range from 0-21 with a mid-point of 10.5.

** The larger mean represents a heavier utilization of "Beef Cattle Time."

Table 6

The Relationship Between Utilization Score of "Beef Cattle Time" and Tennessee Cattlemen's Association Membership

Tennessee Cattlemen's Association Membership	Utilization Score *	
	Mean **	Standard Deviation
Yes	7.77	3.98
No	6.24	3.68

t = 2.15, df = 119, p = .033

* Utilization score could range between 0-21 with a mid-point of 10.5.

** The larger mean represents a heavier utilization of "Beef Cattle Time."

Table 7

The Relationship Between Utilization Score of "Beef Cattle Time" and Tennessee Beef Producers who have Graduated or who are Currently Enrolled in the Tennessee Master Beef Producer Program

Graduate or Currently Enrolled in the Tennessee Master Beef Producer Program	Utilization Score *	
	Mean**	Standard Deviation
Yes	7.81	4.30
No	6.40	3.36

t = 2.01, df = 120, p = .046

* Utilization score could range from 0-21 with a mid-point of 10.5.

** The larger mean represents a heavier utilization of "Beef Cattle Time."

Table 8

Description of All Respondents Utilization of "Other Sources of Information"

Other Sources of Information	Frequency*	Mean**	Standard Deviation
Beef Cattle Time	246	2.60	1.31
Other beef cattle newsletters	245	3.03	1.19
Other extension publications	247	3.19	1.08
Cattle or farm magazines	252	3.47	1.06
Newspapers	241	2.56	1.21
Television	250	2.56	1.29
Extension meetings	250	3.00	1.20
University internet websites	241	2.02	1.22
University extension specialists	250	2.83	1.25
Visits with Extension Agents	249	2.94	1.19
Local farm and feed dealers	249	3.44	1.07
NRCS agent	245	2.37	1.26
Veterinarians	248	3.30	1.08
Other cattle producers	249	3.45	1.04
Private consultants	239	1.56	1.04
Agricultural teachers	240	1.82	1.11
Local livestock associations	243	2.53	1.21
State livestock associations	237	2.11	1.18

* Frequency represents the number of responses each source received.

** The larger the mean the more the utilization of the source.

3. Other Extension publications (3.19)
4. Veterinarians (3.30)
5. Local farm and feed dealers (3.44)

Overall utilization of "other sources of information" on readers and non-readers

In an effort to measure how "heavily" *readers and non-readers* utilized "other sources of information," an "other sources of information" utilization score was developed using statements 16-32 in the survey. Statement 15 was not included in this utilization score because it was already discussed previously in the utilization of "Beef Cattle Time." Each of the17 statements were based on a 5 point scale. A score of 1 meant there was no utilization of the source of information and a score of 5 meant there was a full utilization of the source of information. Summed, these 17 statements produced a weighted score that could range from 17-85 with a mid-point of 51. A score of 17 represented no utilization of other sources and a score of 85 represented complete utilization of all other sources. The actual computed "other utilization" score for respondents ranged from 17-85. The mean score for the group was a 45.7 with a standard deviation of 11.68.

Relationship between "other sources of information" utilization score and selected demographic variables

In section four of objective two, the relationships between the computed utilization of "other sources of information" score, described above, and five selected independent demographic variables were tested. The demographic variables included:

1. Age
2. Type of beef cattle operation

3. Farming status
4. Member of Tennessee Cattlemen's Association
5. Graduate or currently enrolled in the Tennessee Master Beef Producer Program

A t-test was used to test inferentially the relationships between the computed score of utilization of "other sources of information" and three of the five independent variables which were: type of operation, membership with Tennessee Cattlemen's Association, and graduate or currently enrolled in the Tennessee Master Beef Producer Program. An Analysis of Variance was used to describe the relationship between utilization of "other sources of information" with: age and farming status since these two nominally scaled variables had more than two levels. Of the five independent variables studied, membership with Tennessee Cattlemen's Association, participation in Tennessee Master Beef Producer Program, and farming status were significantly related to the level of utilization of other sources of information.

As recorded in Table 9, those producers who are members of the Tennessee Cattlemen's Association utilized other sources of information more heavily than those non-members ($t = 5.96$, $df = 208$, $p = < .001$).

As described in Table 10, those producers who were graduates or currently enrolled in the Tennessee Master Beef Producer Program utilized other sources of information more heavily than those who were not participants ($t = 5.72$, $df = 209$, $p = < .001$).

A one way Analysis of variance determined the relationship between utilization of other sources of information and farming status. Table 11 describes the relationship. Since the Analysis of Variance proved to be statistically significant ($f = 7.06$, $df = 2,206$, $p = < .001$), the Duncan's Post Hoc Test was used to determine where significant differences existed

Table 9

The Relationship Between the Utilization Score of "Other Sources of Information" and Membership with the Tennessee Cattlemen's Association

Membership with the Tennessee Cattlemen's Association	Utilization Score *	
	Mean**	**Standard Deviation**
Yes	49.50	10.37
No	40.72	10.89

t= 5.96, df = 208, p = < .001

* Utilization score could range from 17-85 with a mid-point of 51.

** The larger mean represents a heavier utilization of "other sources of information."

Table 10

The Relationship Between the Utilization Score of "Other Sources of Information" and Those Producers who are Graduates or Currently Enrolled in the Tennessee Master Beef Producer Program

Graduate or Currently Enrolled in the Tennessee Master Beef Producer Program	Utilization Score *	
	Mean**	Standard Deviation
Yes	49.12	10.09
No	40.58	11.41

t= 5.72, df = 209, p = < .001

* Utilization score could range from 17-85 with a mid-point of 51.

** The larger mean represents a heavier utilization of "other sources of information."

Table 11

The Relationship Between the Utilization Score of "Other Sources of Information" and Farming Status

	Utilization Score *	
Farming Status	**Mean****	**Standard Deviation**
Full time	48.39b	9.43
Part time	45.99b	11.70
Retired	39.13a	11.47

f = 7.06, df = 2, 206, p = < .001

* Utilization score could range from 17-85 with a mid-point of 51.

** Means containing different letters are significantly different as calculated by the Duncan's Post Hoc Test.

between the three groups. As reported in Table 11, retired farmers utilized other sources of information significantly less than did full-time or part-time farmers. However, full-time and part-time farmers did not differ significantly in their level of utilization of other sources of beef cattle information.

Utilization of "other sources of information" on readers

The purpose of this section was to describe the frequency distributions of how only *readers* of "Beef Cattle Time" utilized "other sources of information" to make management decisions on their operations. As reported in Table 12, utilization scores for all sources of information ranged from a low of 1.53 (private consultants) and 1.90 (agricultural teachers) to a high of 3.50 (cattle or farm magazines) and 3.43 (other cattle producers), with "Beef Cattle Time" receiving an average of 3.35, slightly above average, but still below "cattle or farm magazines," and "other beef cattle producers."

Overall utilization of "other sources of information" on readers

In an effort to determine how "heavily" *readers* utilized other sources of information, the "other sources of information" utilization score which was computed above was used. Each of the17 statements were based on a 5 point scale. A score of 1 meant there was no utilization of the source of information and a score of 5 meant there was a full utilization of the source of information. Summed, these 17 statements produced a weighted score that could range from 17-85 with a mid-point of 51. A score of 17 represented no utilization of other sources and a score of 85 represented complete utilization of all other sources. The actual computed "other sources of information" utilization score for *readers* ranged from 24-62 with a mean of 46.81 and a standard deviation of 10.96.

Table 12

Description of Readers Utilization of "Other Sources of Information"

Other Sources of Information	Frequency*	Mean**	Standard Deviation
Beef Cattle Time	131	3.35	.894
Other beef cattle newsletters	125	3.14	1.06
Other extension publications	128	3.38	.956
Cattle or farm magazines	130	3.50	.909
Newspapers	125	2.52	1.11
Television	129	2.55	1.22
Extension meetings	130	3.16	1.13
University internet websites	123	2.11	1.27
University extension specialists	129	2.98	1.24
Visits with Extension Agents	129	3.08	1.14
Local farm and feed dealers	128	3.41	.992
NRCS agent	127	2.46	1.18
Veterinarians	128	3.29	1.07
Other cattle producers	128	3.43	.969
Private consultants	121	1.53	.975
Agricultural teachers	123	1.90	1.11
Local livestock associations	126	2.52	1.17
State livestock associations	121	2.19	1.20

* Frequency represents the number of responses each source received.

** The larger the mean the more utilization of the source.

Relationship between "other sources of information" utilization score and selected demographic variables

The relationship between the computed "other sources of information" utilization score described above and five selected independent demographic variables were tested. The demographic variables included:

1. Age
2. Type of beef cattle operation
3. Farming status
4. Member of Tennessee Cattlemen's Association
5. Graduate or currently enrolled in the Tennessee Master Beef Producer Program

A t-test was used to test inferentially the relationships between the computed score of utilization of "other sources of information" and three of the five independent variables which were: type of operation, membership with Tennessee Cattlemen's Association, and graduate or currently enrolled in the Tennessee Master Beef Producer Program. An Analysis of Variance was used to describe the relationship between utilization of "other sources of information" with: age and farming status since these two nominally scaled variables had more than two levels. Of the five independent variables studied, membership with Tennessee Cattlemen's Association, and participation in Tennessee Master Beef Producer Program were significantly related to the level of utilization of "other sources of information."

As recorded in Table 13 those producers who are members of the Tennessee Cattlemen's Association utilized "other sources of information" more heavily than those non-members ($t=4.47$, $df=103$, $p=<.001$).

Table 13

The Relationship Between the Utilization Score of "Other Sources of Information" and Those Producers who are Members of the Tennessee Cattlemen's Association

Membership with the Tennessee Cattlemen's Association	Utilization Score *	
	Mean**	**Standard Deviation**
Yes	50.36	10.61
No	41.23	9.18

t= 4.47, df = 103, p = < .001

* Utilization score could range from 17-85 with a mid-point of 51.

** The larger mean represents a heavier utilization of "other sources of information."

As recorded in Table 14 those producers who are graduates or currently enrolled in the Tennessee Master Beef Producer Program utilized "other sources of information" more heavily than those non-members (t=4.60, df=104, p=<.001).

Objective 3

Satisfaction of "Beef Cattle Time" on readers

The purpose of objective three was to determine the "level of satisfaction" of Tennessee beef producers with "Beef Cattle Time." This objective included only *readers* of "Beef Cattle Time." The first section of objective three was to describe the satisfaction statements, 38-57. Satisfaction statements were based on a five-point Likert-type scale. Respondents were asked to specify their level of agreement or disagreement to the statements. As reported in Table 15, satisfaction scores ranged from a low of 3.79 ("Beef Cattle Time" Is an asset to my operation) to a high of 4.41 (newsletter content is informative). All the statements were rated a 3.00 or above.

Overall satisfaction of "Beef Cattle Time" on readers

In an effort to determine the overall satisfaction of "Beef Cattle Time" with *readers*, a satisfaction score was computed using statements 38-57 in the survey except for statements 49 and 51 because they did not scale with the other 18 items. The decision to drop these two items from the scale was made by calculating a Cronbach's Alpha score for this attitudinal scale. Alpha prior to dropping these two items was .927. However, the items clearly deterred from an internally consistent measure because cropping them increased Alpha from a .927 to a .969. While either score indicated acceptable internal consistency, the fact that these two items so clearly differed from the other 18 caused the researcher to drop them prior to analysis. These 18 statements were each based on a five-point Likert-type scale available for the producers to rate. The available responses were summed with a satisfaction score ranging from 18-90 with a mid-

Table 14

The Relationship Between the Utilization Score of "Other Sources of Information" and Those Producers who are Graduates or Currently Enrolled in the Tennessee Master Beef Producer Program

Graduate or Currently Enrolled in the Tennessee Master Beef Producer Program	Utilization Score *	
	Mean**	Standard Deviation
Yes	51.01	10.43
No	42.00	9.51

t= 4.60, df = 104, p = < .001

* Utilization score could range from 17-85 with a mid-point of 51.

** The larger mean represents a heavier utilization of "other sources of information."

Table 15

Description of the Level of Satisfaction of Producers Who Read "Beef Cattle Time"

Satisfaction Statements	Frequency*	Mean**	Standard Deviation
Look forward to receiving the newsletter	130	4.05	1.05
Enjoy reading the newsletter	128	4.31	.876
Satisfied with the size of font	128	4.26	.941
Satisfied with the color of paper	128	4.25	.922
Satisfied with the number of pages	127	4.24	.912
Satisfied with the present format	126	4.21	.915
Topic headings help locate information needed	126	4.30	.772
Newsletter is timely	126	4.19	.892
Newsletter content is interesting	129	4.33	.794
Newsletter content is informative	128	4.41	.726
Satisfied with the subject content	128	4.30	.809
Newsletter should contain more articles	126	3.56	1.10
Articles are easy to read	128	4.38	.804
Information is repetitive	126	2.98	1.16
Information in articles is current	128	4.18	.798
Information is accurate	128	4.26	.766
Information is practical	128	4.24	.781
Depth of information in each article is sufficient	128	3.98	.887
"Beef Cattle Time" is an asset to my operation	128	3.79	1.00
"Beef Cattle Time" is easily accessible	127	4.07	.927

* Frequency represents the number of responses each statement received.

** The larger the mean the more satisfaction for the statements.

point of 54. Eighteen represented total dissatisfaction with "Beef Cattle Time" and 90 represented total satisfaction. The actual computed satisfaction score for the respondents ranged from 35-90. The mean score for the group was a 75.17 with a standard deviation of 12.78.

Relationship between overall satisfaction score and selected demographic variables

The section of objective three was to determine any significant relationships between the satisfaction score, the dependent variable described above, and seven selected independent demographic variables which included:

1. Computer ownership
2. Internet access
3. Type of beef cattle operation
4. Age
5. Farming status
6. Member of Tennessee Cattlemen's Association
7. Graduate or currently enrolled in the Tennessee Master Beef Producer Program

A t-test was used to test inferentially the relationships between the computed score of satisfaction and five of the seven independent variables which were: computer ownership, internet access, type of operation, membership with Tennessee Cattlemen's Association, and participation in the Tennessee Master Beef Producer Program. An Analysis of Variance was used to describe the relationship between satisfaction score with: age and farming status since these two nominally scaled variables had more than two levels. Of the seven independent variables studied, only type of operation was significantly related to the level of satisfaction.

As reported in Table 16 owners of cow-calf operations were more satisfied with "Beef Cattle Time" than were non-cow-calf operators ($t = -2.14$, $df = 115$, $p = .035$). There were no other significant relationships to report for this variable.

To better understand the satisfaction level of producers with "Beef Cattle Time" there were three other questions presented for all respondents. They were the following: are you satisfied with delivery method of "Beef Cattle Time," what is the preference for receiving "Beef Cattle Time" if not satisfied with delivery method, and are you satisfied with number of newsletters issued per year. All three questions had high response rates. From those respondents who received "Beef Cattle Time," 123 (91.8%) were satisfied with the delivery method of "Beef Cattle Time," 5 (3.7%) were not satisfied with the delivery method and 6 (4.5%) chose to not respond. Those who were not satisfied with the delivery method of "Beef Cattle Time," which could have been answered by readers and non- readers, 97 (35.1%) preferred to receive the newsletter by mail from the extension agent, 4 (1.4%) from the UT Animal Science website, 1 (.4%) from livestock sale barns, 1 (.4%) from businesses, 3 (1.1%) selected other, for example email, and 170 (61.6%) chose to not respond. Finally, out of those producers who did read "Beef Cattle Time" 119 (88.8%) producers who did read "Beef Cattle Time" 119 (88.8%) were satisfied with the number of newsletters issued per year, 7 (5.2%) were not satisfied with the number of newsletters issued per year, and 8 (6.0%) chose to not respond. Since response to these questions was predominantly favorable no analysis was conducted regarding their relationship to demographic variables as there were very little variances in response to the study.

Table 16

The Relationship Between the Satisfaction Level Score of "Beef Cattle Time" and Type of Operation

	Satisfaction Score*	
Cow-Calf Operations	**Mean****	**Standard Deviation**
Yes	76.30	12.62
No	69.70	12.39

t = -2.14, df = 115, p = .035

* Satisfaction score could range from 18-90 with a mid-point of 54.

** The larger mean represents a heavier level of satisfaction.

Objective 4

Content benefits of "Beef Cattle Time" on readers

The purpose of objective four was to determine the benefits of "Beef Cattle Time" identified by *readers* of the newsletters. The first section of the objective was to describe the benefit producers gained from reading beef cattle production articles (See Table 17). As reported in Table 17, there was a list of seven beef production practice topics contained in "Beef Cattle Time." They included: breeding and genetics, nutrition, forage production, marketing, management, herd health, and reproduction. Producers gained the most benefit from reading the forage production articles (4.13) while producers gained the least benefit from reading, breeding and genetic articles (3.71) and marketing articles (3.71).

Overall content benefit of "Beef Cattle Time" on readers

In an effort to determine the overall benefit producers gained from the beef production practice articles, a "benefit" score was computed using statements 58-64. These beef management topics were based on a five-point Likert-type scale. Respondents were asked to specify the level of benefit gained from each management practice, with a 1 being not useful and 5 being very useful. The computed score from the seven statements could have ranged from 7-35 with a mid-point of 21. Seven represented no benefit and 35 represented full benefit. The actual range of benefit scores from the respondents was 7-35. The mean was 27.49 and the standard deviation was 5.16.

Table 17

Description of the Beef Management Practice Topics Discussed in "Beef Cattle Time"

Beef Cattle Production Practices	Frequency*	Mean**	Standard Deviation
Breeding and genetics	126	3.71	1.02
Nutrition	125	4.09	.803
Forage production	126	4.13	.870
Marketing	127	3.71	1.00
Management	125	3.96	.884
Herd health	126	4.05	.799
Reproduction	127	3.87	.891

* Frequency represents the number of responses each topic received.

** The larger the mean the heavier the benefit of the topic.

Relationship between overall content benefit score of Readers and selected demographic variables

The third section of objective four was to describe significant relationships between the content benefit score described above and seven selected demographic variables which included:

1. Computer ownership
2. Internet access
3. Type of cattle operation
4. Member of Tennessee Cattlemen's Association
5. Graduate or enrolled in Tennessee Master Beef Producer Program
6. Age
7. Farming status

A t-test was used to test inferentially the relationships between the computed "benefit" score of and five of the seven independent variables which were: computer ownership, internet access, type of operation, membership with the Tennessee Cattlemen's Association, and participation in the Tennessee Master Beef Producer Program. An Analysis of Variance was used to describe the relationship between benefit with: age and farming status since these two nominally scaled variables had more than two levels. Of the seven independent variables studied, type of operation and membership with the Tennessee Cattlemen's Association were significantly related to benefit.

As reported in Table 18, owners of cow-calf operations benefited more from "Beef Cattle Time" beef cattle production articles than did non-cow-calf operators ($t = -2.36$, $df = 121$, $p = .020$).

Table 18

The Relationship Between Benefit Score of the Beef Management Topics and Type of Operation

	Content Benefit Score*	
Cow-Calf Operation	**Mean****	**Standard Deviation**
Yes	28.00	4.93
No	25.18	5.68

t = - 2.36, df = 121, p = .020

* Content benefit score could range from 7-35 with a mid-point of 21.

** The larger mean represents a heavier content benefit received.

As reported in Table 19, producers who were graduates or currently enrolled in the Tennessee Master Beef Producer Program were more likely to benefit from the beef production articles than those who were not graduates or enrolled in the Tennessee Master Beef Producer Program ($t = 2.67$, $df = 119$, $p = .009$).

Personal benefit from "Beef Cattle Time" on readers

The second section of objective four describes the benefits *readers* have personally gained from "Beef Cattle Time." A five-point Likert-type scale was used to allow the respondents to indicate to what level they agreed or disagreed with these benefit statements. Table 20 provides respondent ratings of "personal benefits" gained from reading "Beef Cattle Time." Table 20 contained nine statements about benefits that producers could have possibly acquired. The personal benefit scores ranged from a low of 3.35 (able to solve beef cattle problems) to a high of 4.10 (have increased my knowledge of beef production practices). All statements rated above a 3.0.

Overall personal benefit from "Beef Cattle Time" on readers

In an effort to measure how "heavily" *readers* gained personal benefit, a "personal benefit" score was developed using statements 65-73 in the survey. This score could range from 9-45 with a mid-point of 27. Nine represented no benefit and 45 represented full benefit. The actual collection of respondent benefit scores ranged from 9-45. The mean score for the group was 33.69 with a standard deviation of 7.27.

Table 19

The Relationship Between Benefit Score of Beef Management Articles and Those Producers Who are Graduates or Currently Enrolled in the Tennessee Master Beef Producer Program

	Content Benefit Score*	
Graduate or Currently Enrolled in the Tennessee Master Beef Producer Program	**Mean****	**Standard Deviation**
Yes	28.77	4.50
No	26.47	26.47

$t = 2.67$, $df = 119$, $p = .009$

* Content benefit score could range from 7-35 with a mid-point of 21.

** The larger mean represents a heavier content benefit received.

Table 20

Description of Personal Benefits Gained From Reading "Beef Cattle Time"

Statements of Personal Benefits	Frequency*	Mean**	Standard Deviation
Have increased my knowledge of beef production practices	125	4.10	.841
Have seen an increase in profit on my operation	121	3.45	1.02
Have new ideas of production practices to use on my operation	122	3.84	.936
Knowledgeable about upcoming beef cattle events	124	4.06	1.03
Have additional resources to help maintain my operation	122	3.85	.933
Knowledgeable about the latest beef production practices	123	3.94	.890
Have changed the way I manage my beef operation	123	3.37	1.04
Able to solve beef cattle problems	122	3.35	.871
Able to apply the information on my operation	122	3.80	.953

* Frequency represents the number of responses each statement received.

** The larger the mean the more personal benefit from the statements.

Relationship between personal benefit score and selected demographic variables

The fourth section to objective four was to determine any statistically significant relationships between the personal benefit score described above and seven selected independent demographic variables which included:

1. Computer ownership
2. Internet access
3. Type of cattle operation
4. Member of Tennessee Cattlemen's Association
5. Graduate or enrolled in Tennessee Master Beef Producer Program
6. Age
7. Farming status

A t-test was used to test inferentially the relationships between the computed score of personal benefit and five of the seven independent variables which were: computer ownership, internet access, type of operation, membership with Tennessee Cattlemen's Association, and participation in the Tennessee Master Beef Producer Program. An Analysis of Variance was used to describe the relationship between benefit with: age and farming status since these two nominally scaled variables had more than two levels. Of the seven independent variables studied, only type of operation and participation in the Tennessee Master Beef Producer Program were significantly related to personal benefit.

As recorded in Table 21, owners of cow-calf operations gained more personal benefits than those non cow-calf operators ($t = -2.41$, $df = 115$, $p = .018$).

Table 21

The Relationship of Personal Benefit Score and Type of Operation

	Personal Benefit Score*	
Cow-Calf Operation	**Mean****	**Standard Deviation**
Yes	34.41	7.07
No	30.20	7.38

t = -2.41, df = 115, p = .018

* Personal benefit score could range from 9-45 with a mid-point of 27.

** The larger mean represents a heavier personal benefit received.

As reported in Table 22, those producers who were graduates or currently enrolled in the Tennessee Master Beef Producer Program gained more personal benefits than are those who were not graduates or currently enrolled in the Master Beef Producer Program ($t = 2.26$, $df = 113$, $p = .026$).

Objective 5

The future of "Beef Cattle Time" on readers

The purpose of objective five was to determine the future of "Beef Cattle Time" as perceived by Tennessee beef producers. To study this construct, first, a frequency distribution was used to identify the number of producers either agreed or disagreed with the continuation of "Beef Cattle Time." The question used to analyze this data asked "Should „Beef Cattle Time' be continued". As reported in Table 23, out of all 134 producers who read "Beef Cattle Time," 111 (82.8%) beef producers said "yes" "Beef Cattle Time" should be continued 6 (4.5%) said "no" "Beef Cattle Time" should not be continued and 17 (12.7%) chose to not respond. Note not all producers who read the newsletter chose to respond to this question.

The second section of objective five analyzed responses from the four questions asked in part five of the survey. These questions allowed beef producers to provide their opinions about "Beef Cattle Time" and what they would like to see in the newsletter that would make it more valuable to them. The collected responses from each question were analyzed and grouped into common themes based on similar thoughts. Following is a listing of common themes. A complete list of all responses is found in Appendix H.

Table 22

The Relationship between Personal Benefit Score From "Beef Cattle Time" and Producers Who are Graduates or Currently Enrolled in the Tennessee Master Beef Producer Program

Graduate or Currently Enrolled in the Tennessee Master Beef Producer Program	Personal Benefit Score*	
	Mean**	Standard Deviation
Yes	35.30	6.83
No	32.42	6.83

t = 2.26, df = 113, p = .026

* Personal benefit score could range from 9-45 with a mid-point of 27.

** The larger mean represents a heavier personal benefit.

Table 23

Description of Beef Producers Belief in Whether "Beef Cattle Time" Should Be Continued

Should "Beef Cattle Time" be Continued	Frequency (N = 134)	Percent (%)	Valid Percent (%)
Yes	111	82.8	94.9
No	6	4.5	5.1
Non response	17	12.7	

Question # 1

For those producers who were in favor of the continuation of "Beef Cattle Time" they were asked to explain why. The main themes that commonly occurred throughout this question are described below.

Theme # 1

The first theme confirmed that "Beef Cattle Time" provides producers with useful information such as cattle production practices that can be used on their beef cattle operations. Out of the 134 producers who read "Beef Cattle Time" 76 producers responded to this question. Out of these responses 15 responses were included in this theme. Below are some of the responses that support this theme.

- It helps me plan on marketing calves.
- For better management ideas that I can gain for my operation.
- It helps me in making decisions with beef cattle management.
- It helps to keep us current with new industry trends and guidelines and management practices in order to produce a safer nutritious product for the consumer.
- As a reminder of practices which should be used to lower cost of production.
- Source of latest cattle information management practices.
- To continue to help and remind the producer of the practices they should do or that will help them. We sometimes forget as we age.
- Practical information that can be used on beef cattle operations.
- Beef Cattle Time has information that is very useful in my beef operation.
- Provides new ideas and reminds me of practices that I need to be doing in a timely manner.

- Beef Cattle Time has information that is very useful in my beef operation.

Theme # 2

The second theme established the idea that "Beef Cattle Time" keeps producers up to date on current information. Out of the 76 responses 13 responses were similar to that of the identified theme. Below are those responses.

- To better keep producers in tune with the time.
- Good to know what research is coming up with how to improve beef profitability.
- It keeps me up to date on the latest practices and programs available.
- It helps to keep us current with new industry trends and guidelines and management practices in order to produce a safer nutritious product for the consumer.
- It helps farmers stay informed.
- For the information it gives on the latest ways to raise cattle
- Current information is an asset to cattle production.
- "Beef Cattle Time" gives farmers timely and important information to use if needed.
- To help me keep up with changes in beef cattle operations
- New information needs to be available at all times.
- It offers up to date information.
- Articles are very up to date and help keep us on schedule with our work.
- Pertinent and provides latest statistical data.

Theme # 3

The third theme that comes from question one responses was "Beef Cattle Time"

is an informative, interesting, relevant and helpful source of information. From the 76 responses, over 20 were related to this theme. The following examples are described.

- Good source of correct information.
- It is very helpful.
- It is informative.
- Most farmers would benefit from the information listed.
- To supply us with information that will help us.
- Lots of useful information.
- Has information relevant to our operation.
- Information is very useful on the farm.
- When you take time to read it the articles are helpful.
- It was helpful when I was raising beef cattle.
- It is very interesting and helpful to us.
- Helpful Information.
- I enjoy reading the articles plus it is informative and has helped my operation.
- Valuable source of information for the producers.

Question # 2

For those producers who said "Beef Cattle Time" should not be continued, they were asked to explain why. The number of producers who responded to this question was six. Since there were a small number of responses no themes could be identified.

- Too general recommendations not balanced with costs.
- Too little kick for $ cost.

- I would use money for more practical research projects.
- My operation is too small.
- There is already so much information available from other sources.
- Unpredictability of mail. Put it on a website or send it via email.

Question # 3

The third question was "What are some suggestions for improving "Beef Cattle Time." This question was intended for producers to offer ideas as to what areas of improvement they would want to see in the newsletter. Out of the 134 producers who read "Beef Cattle Time" 36 responded to this question.

Theme # 1

A reoccurring theme from question three was that the newsletter needs to contain more articles on management practices. Twelve out of the 36 respondents wanted to see more management articles. In the order of highest requested to least requested the type of management practices included: forage production, marketing, genetics and reproduction, health and nutrition. The following were some of the responses that contained the same information.

- Have more on weed control.
- Time of year to sell, weight of calves, where to buy the best breed stock.
- May not be possible, but more health related articles could be helpful.
- More timely, more market information, more future insight at marketing trends.
- More on repro and genetics and embryo work, also sexed semen(when it is profitable to use and when not.
- More articles, forage production, nutrition and marketing.

- More information about comparisons as effects and cost of creep-feeding.
- I would appreciate more information on genetics, bulls, cows, how to judge cattle structure and appearance, how appearance relates to good buy.
- Add different breed information and how to maintain and do it with as little or no cash flow, when times are hard.
- Actual herd health stories and interviews.
- More info on registering cattle.
- Information on cattle breeds and performance for commercial sales. weight, price per pound, calving mortality weight gains.

Theme # 2

Another reoccurring theme from question three was that there was no need to improve the newsletter. Seven out of 36 producers felt that the newsletter is fine as it is. The following are the responses that support this theme.

- I am happy with the current format.
- I think you are doing a good and timely job with articles.
- Fine as it is!
- None (2 responses)
- Keep up the good work at the University of Tennessee
- Keep up the good work you are doing, but always looking for better ways to bring our beef cattle to be some of the best in the world.

Question # 4

The fourth question wanted to know if there should be any other practices or information included in "Beef Cattle Time". From the 134 beef producers who read "Beef Cattle Time", 23 responded to this question.

Theme # 1

The common theme concluded that more articles and information regarding production practices was desired. Out of the 23 who responded 15 producers shared similar ideas about the type of information and practices they would want to see in the newsletter. The types of practices were, in the order of most desired practice to the least desired practices: Genetics and breeding, forage, and marketing. Health, nutrition and reproduction were last on the list. The following are some of the responses:

- The latest cost of receiving a calf from birth and weaning weight.
- Artificial Insemination procedures.
- Hay Management, time of cutting for best profitable yield.
- 1. Forage production in the real world. 2. Marketing - source and age. 3. Genetics that fit one's resources how to ID 4. How to ID open cow (pregnancy test with blood), 5. Breeding problems - you tend to blame all on nutrition and disease – what about genetics?
- More about parasite control and disease control through feeds and feeding.
- Crossbreeding.
- New stuff about embryo transfer as it comes out.

Chapter 5

SUMMARY, FINDINGS, AND RECOMMENDATIONS

(This article is written in the following format for the purpose of submission to the Journal of Agricultural Education)

Introduction

Previous research on beef producers report that they use multiple sources of print media to meet their information needs (Gloy et al., 2000 & Maddox, 2001). According to Lawrence & Schuknecht (2005) feedlot and cow-calf operators designate newsletters and trade magazines as their most important source of management information (Priorities, para.2). With the plethora of information sources currently available to beef producers, there is a need to determine their impacts if they are to continue their purpose of providing producers with needed information.

"Beef Cattle Time" is a statewide extension publication targeted specifically for the beef cattle producers of Tennessee. Its purpose is to provide Tennessee beef cattle producers with useful and practical information that can be applied to either improve or sustain their operations. The newsletter, published quarterly since 1974, contains between five and six articles on the subjects of herd health, forage production, reproduction, nutrition, breeding and genetics, marketing and management. "Beef Cattle Time" is delivered to the producer through many different facets, but the main one is through mail from the extension agent.

The distribution of the newsletter began primarily as a mail out to county extension offices in Tennessee, and then in the winter of 2001 became accessible on line. Approximately 21,000 copies are distributed quarterly and about 84,000 are distributed yearly.

A need for evaluation of the newsletter was proposed since there had been no evaluation

of its impact on beef producers of Tennessee since its inception. For the past 36 years "Beef Cattle Time" has been in circulation without any type of evaluation, indicating a need to determine how beef producers perceive it and rate its effectiveness.

Theoretical Framework

The dissemination of information by The Extension Service to the people dates back to its beginning. Since 1914, a primary goal of extension has been to provide practical information to specified audiences to help them sustain their livelihood. Today, The Agricultural Extension Service continues to educate farmers about new technology and provide technical assistance (Ford, 1995). Through The Extension Service, information is dispersed to agriculturalists such as beef producers using a variety of methods (Israel, 1991). These include: fact sheets, field days, newsletters, demonstrations, bulletins, meetings, visits, and Television programs (Paterson, 2007, p. 170). In order to understand the impacts of these various activities, extension conducts evaluations (Boyd, 2009). These evaluations are intended to determine the success of activities for the purpose of future planning and continuance.

There is a need to know if our audience is being reached through the different publications extension has to offer. Evaluation needs to be conducted on publications because there could be a large percentage of beef producers receiving information that may not be reading or getting anything out of it.

Since extension is in competition with other sources of information there needs to be concrete knowledge of the impacts of extension publications. Beef producers are demanding information more now than ever. The question is, "What source is impacting them the most?" Since the purpose of this study was to evaluate the impact of "Beef Cattle Time" on its readership, an extensive research study was conducted based on the following literature review.

Literature Review

Newsletters defined and their purpose

Newsletters are said to be any type of small formatted, print publication with a purpose of delivering timely information to a specific targeted audience fairly quickly (Bivins, 1992, p. 1). This may be the reason for so many newsletters in circulation today. Some of the many specific readerships of newsletters include: college campuses for the purpose of fostering career development in college students (Mitchell, 1988), as a way of providing education to the food stamp eligible audience by providing and improving nutrition habits (Harmon et al., 2007), or to help avoid child neglect and abuse, and to encourage good parenting by educating parents during their child's first few years of life (Baumgertner et al., 2000). Newsletters contain specialized information that keep people up to date and many times gives them available information that may not be found elsewhere (Matz, 2006).

The purpose of a newsletter is to inform (Matz, 2006; Blair, 1997 & Nelson, 1993), educate (Nelson, 1986; Dickinson & Cudaback, 1992; Bogenschneider & Stone, 1997), communicate specialized information (Fanson, 1994 & Hudson, 1982), and target specific audiences (Matz, 2006; Hudson, 1982; Bruhn, 1999).

Newsletters are versatile. Their versatility lies in their ability to be produced with ease and also to target either large or small audiences (Bivins, 1992). They can also be distributed quickly and in a timely manner. The disadvantages of newsletters lie within their impersonal attempt for informing audiences, as well as their minimal readership, due to audiences scanning for personal need.

The success of a newsletter

The content (Blair, 1997 & Bruhn, 1999), layout and design (Sosnin, 1996 & Bruhn, 1999), format (Bond, 1992 & Bivins, 1992), and frequency (Anthony & Rennie, 1989), among many other things, can impact the success of a newsletter. These factors are all considered critical for a newsletter reader when deciding whether to bother reading it. Content is a major driving force for a newsletter, because to be read and accepted it is important that it contain useful and meaningful information as well as intriguing stories so the readers' interest is sparked **(**Sosnin, 1996). The layout and design of a newsletter, it is important for the layout be clear and eye catching since they are many times read on the go (Hamilton, 1996). The design of the newsletter must add to its content (Bond, 1992). The format of a newsletter is of great importance as well because it has to do with the size of paper, column width, number of columns on each page, and the location of information from most important to least important (Bruhn, 1999, p. 41-42). If the information in the newsletter looks like too much, or the paper is too small it will overwhelm the reader. Frequency has to do with the number of times a newsletter is distributed in a year (Bivins, 1992). If the number of newsletters distributed is too few or too many throughout the year, readers will grow impatient or overwhelmed.

Evaluation of newsletters

With the large number of newsletters in circulation, there has been little evaluation of their acceptance (Davis, 1990). Broussard and Floress (2007) stated "There are difficulties in thoroughly evaluating impacts of newsletters alone and the effort may not be worth the cost and time and other resources. Broussard & Floress (2007) acknowledged that "low response rates and challenges in defining the effects of a newsletter are but two of these obstacles" (p. 1-2). Without an evaluation there is no way to know if newsletters are fulfilling their purpose or doing

what they were intended. The question to present is, are these newsletters actually being accepted, read and used? The only way to answer this is to survey the readers, in other words ask the readers (Hudson, 1982). According to Sosnin (1996) a readership survey will help in determining the feelings of the audience to the publication and what selections are actually being read. Readership surveys also help to determine what is working and what isn't working as well as what part of the layout needs to change, including article topics (Sosnin, 1996). An evaluation of a newsletter is needed in order to determine its effectiveness (Bivins, 1992). Without an evaluation you will be left never knowing if you reached your intended audience.

Criteria used to determine newsletter impact

Previous studies have evaluated newsletters on a variety of criteria for determining their impacts. Lancaster (1997) used variables such as appearance, interest in content and interest in future issues to evaluate an elderly nutrition newsletter. Another group of variables Lancaster (1997) used was demographic information. The variables such as age, education level, gender, race, living situation, and perceived income level were used in the survey in order to provide information about the respondents. The respondents were asked to provide information about themselves that could influence their response about the newsletter (Lancaster, 1997). Researchers use criteria such as utilization and usefulness of newsletters to determine impacts. Zimmer's et al. (2006) newsletter evaluation study measured the utilization and usefulness of a state-wide 4-H volunteer newsletter on 4-H volunteers and 4-H Extension staff. Satisfaction is another criterion which can be used to assess the impacts of a newsletter (Kiernan, 2001, tipsheet #43). In a readership survey conducted by Woodbury (1988) a survey was developed with questions regarding reader satisfaction and interest "with specific contents and preferences about quantity and subject of published articles in the Canadian Veterinary Journal (CVJ)" (p. 889).

Newsletters can have the largest impacts when they provide benefits to the reader. These benefits can consist of a change in behavior and even change in knowledge or attitude. In an evaluation study of a childrearing newsletter, Baumgartner et al. (2000) found, "Most parents reported that reading the newsletters caused them to change their childrearing behaviors in six key areas" (p. 1). For example, parents were able to explain and describe specific changes in their childrearing practices that they attributed to reading the newsletters (Baumgertner et al., 2000, p. 1).

The need for agricultural information for producers is well documented. Lawrence and Schuknecht (2005) concluded that the top research priority for cow-calf and feedlot owners was cattle health, while the top education priority for cow-calf and feedlot owners was genetic selection information (Priorities, para. 1). More specific information needs of farmers and ranchers consist of animal nutrition, animal health, markets, management, technology, and genetics and reproduction (Foltz et al., 1996; Murphy, 1960).

Beef cattle producers utilize many sources of information. Recent studies show that print sources have been receiving a high preference as information sources by agriculturalists (Gloy, Akridge, & Whipker, 2000; Maddox, 2001; Suvedi, Campo, & Lapinski, 1999). Farmers and ranchers use many sources of agriculture media to meet their information needs. According to Lawrence & Schuknecht (2005) feedlot and cow-calf operators designate newsletters and trade magazines as their most important source of management information while TV and radio was the most important source for marketing information (Priorities, para. 2).

One of the many sources beef producers secure information is from the extension service. The mission of the Cooperative Extension Service is to help "improve people's lives through

educational processes which use scientific knowledge focused on issues and needs" (Rassmussen, 1989, p. 4). Today, Extension continues its mission of spreading agricultural information. In fact it is the foundation of Extension. Extension utilizes a variety of methods to distribute information to its selected audiences (Orr, 2003). Aflakpui (2007) believed that Extension is viewed as a linkage system that disseminates information and knowledge to the people. Some of the ways in which "information and knowledge can be disseminated include publications, reports, demonstrations, field days, audio-visual aids, training, seminars and workshops" (Aflakpui, 2007, p. 37).

Purpose of the Study

The purpose of this study was to assess the impacts of "Beef Cattle Time" as perceived by Tennessee beef producers. In order to determine these impacts, a survey was developed and mailed out to Tennessee beef producers to determine the utilization, satisfaction, benefits and future of "Beef Cattle Time." The specific objectives were as follows:

1. To describe, demographically, Tennessee beef producers who read "Beef Cattle Time";
2. To determine the utilization of "Beef Cattle Time" by Tennessee beef producers;
3. To determine the level of satisfaction of Tennessee beef producers with "Beef Cattle Time"; and
4. To determine the benefits of "Beef Cattle Time" identified by Tennessee beef Producers; and
5. To determine the future of "Beef Cattle Time" as perceived by Tennessee beef producers.

Methodology

Design of the Study

The population for this study was Tennessee beef cattle producers. This study anticipated a sample size of 700 in order to reach 95% confidence intervals. To determine the number of participants needed the number of beef operations per county was distributed proportionally over the total number of operations in Tennessee. Once, these mathematical calculations were completed for each county, the final sample size was 703. Note 94 out of Tennessee's 95 counties were included in the study. Lake County was excluded due to the fact that virtually no beef cattle producers were located in that county.

To distribute surveys to beef producers, an electronic copy of a beef producer mailing list was requested from the Agriculture Extension Director from each county. Once the lists were received by the researchers, random selections of producers were performed using the designated numbers pre-determined for each county.

Instrumentation

A single survey was used to collect the needed data. Studies similar to this one were not found, so the development and design of the survey began with research from previous newsletter evaluation studies as well as sample surveys that had been conducted throughout extension. The different parts of the instrument were developed using a combination of previous extension surveys, extension tip sheets, and surveys of previous newsletter evaluation studies. The initial survey was reviewed first, by University of Tennessee faculty in the Department of Animal Science and the Department of Agricultural Extension and Education. Appropriate modifications to questions were made based on recommendations from the faculty members.

The survey was pilot tested to confirm the validity and reliability of the survey instrument using a small intact group of beef producers attending a Master Beef Producer class in Greene County.

Part one of the questionnaire collected demographic data of the producers. These questions helped identify the producer as an individual based on age, number of years in the beef industry, level of education attained, number of cattle (head) on their operation, farming status, number of acres included on their operation, whether they were graduates or currently enrolled in the Tennessee Master Beef Producer Program and if they were members of the Tennessee Cattlemen's Association. Part two of the survey measured the level of utilization of the newsletter. The first section of this objective contained statements asking what the producer did with the newsletter. The second section of objective two used a five-point Likert-type scale to find out at what level producers use other sources of information to get their information. Part three of the survey measured the level of satisfaction of "Beef Cattle Time." Using a five-point Likert-type scale the producers could rate their level of satisfaction on a number of satisfaction statements. Part four of the survey measured the level of benefit received from the newsletter. The first section of this objective used a five-point Likert-type scale to find out at what level producers received benefit from reading the content in the newsletter. The second section also used a five-point Likert-type scale to find out at what level producers received personal benefit. Part five allowed for the producers to write down their thoughts and opinions which would help in determining the future of "Beef Cattle Time."

Survey Distribution

Identification numbers were assigned to each survey to help keep track of those producers who responded. This number was written at the top right corner of the survey. The numbers were obtained from the spreadsheet containing the list of selected producers. Enclosed

in each mail out packet were the cover letter to producers, explaining the reason behind the study and ensured the producers their voluntary and confidentiality participation, the survey, and a stamped, return envelope for return. Four weeks after the initial mail out, a hot pink colored postcard was mailed out thanking those who had responded and a friendly reminder to those who hadn't. A week later, a second letter along with a questionnaire and a stamped, return envelope was mailed to non-respondents urging them to complete the survey.

Data Collection

Out of the 94 counties, 86 beef producer lists were submitted from the counties. Two mailings of the surveys to producers were made. The first mail out included, 639 surveys. We were unable to access the remainder of the planned sample of 703 because several extension directors did not send their producer mailing lists to the researchers, thus making the accessible sample 639. The surveys returned from the first mail out were accounted for. The second mail out consisted of 462 surveys since all 639 didn't come back to the researchers. Following the second mailing, 99 surveys came back. As there were two mail outs, the responders during the first mail out were considered early responders and late responders were those producers who returned surveys after the second mail out. This study is based on the response of 276 producers from 80 counties, a 43% response rate.

Even though the response rate was lower than expected, the information provided for the researchers was still valid. The percentages of surveys returned from each region were still proportional to the percent of cow-calf operations per region. Further evidence to support these findings comes from the fact that the Western region contains the lowest number of beef cattle operations of the three regions in Tennessee. There is also more focus on row crops in the western region. In the Central region of Tennessee, beef cattle operations are most prevalent

because there is a focus on cattle production. In the Eastern region the number of beef operations slightly decreases yet, still producing more cattle than the western region. This information was reviewed by a beef cattle extension specialist who concluded that this was a valid sample of the beef cattle producers in the state of Tennessee, therefore, a valid sample of data.

Table 1, reported the Western region (West Tennessee) returned 54 (38%) surveys with 8,807 (21%) of cow-calf operations in the region. The Central region (Central Tennessee) returned 122 (46%) surveys with 17,007 (42%) of cow-calf operations in the region and the Eastern region (East Tennessee) returned 100 (43%) surveys with 16,530 (39%) of cow-calf operations in the region.

Data Analysis

Data were analyzed using the Predictive Analytics Software for Windows (PASW) formerly known as the Statistical Package for the Social Science (SPSS). Descriptive Statistics were used to analyze the results. Initially, for each objective, a frequency distribution was calculated to check for means and standard deviation. Other PASW analysis used to test and analyze relationships were the Chi-square test, t-test and Analysis of Variance. A Chronbach's Alpha was also used to determine the internal consistency of an attitudinal scale developed for the instrument. Since the desired response rate was not reached, early and late respondents were grouped and compared to determine the relationships in the study and to see if response bias existed.

Summary of Findings and Major Conclusions

Objective 1 - Demographics

With regard to describing the respondents as reported in Table 2 the average respondent was between 50 and 69 years of age, had either a High School education or below, or a Bachelor's Degree. Most had been in beef production for 30 years or more and the vast majority was cow-calf operators. Over half were part-time farmers with the remaining being either full-time or retired. The majority owned computers and also had access to internet. Half of the respondents were members of the Tennessee Cattlemen's Association while slightly more than half were graduates or currently enrolled in the Tennessee Mater Beef Producer Program. More than half of respondents had 50 or fewer head of cattle and owned 200 acres of land or less. Slightly fewer than half received "Beef Cattle Time" in the mail from their extension agents while approximately 4% of them received them from other sources. Approximately half of the respondents in this study did not receive "Beef Cattle Time."

Relationship between education attainment and readership of "Beef Cattle Time"

In an effort to better understand respondents an analysis of readers and non-readers was conducted across a number of demographics variables described above. Of those variables studied only level of education significantly related to readership. As reported in Table 3 those respondents who had a Master's Degree or higher were more likely to read "Beef Cattle Time" than were those who had less than a Master's Degree.

Objective 2- Utilization of "Beef Cattle Time" on readers

In an effort to understand how *readers* actually utilized "Beef Cattle Time," a series of nine statements were included relating to the different ways they might use it. Table 4 provides a

description of how they responded. Most indicated they "Read only articles applicable to me" with the next largest group indicating they "Read the entire newsletter," followed by "Skimmed through it." Approximately one third read the newsletter and immediately put the information to use.

Overall utilization of "Beef Cattle Time" on readers

Overall utilization of "Beef Cattle Time" was defined in this study as a composite score based upon weighted responses to a number of statements described in Table 4. If one looks at the items in Table 4 it can be concluded that the first 7 items constituted an ordinal scale of use where as the last two items although informative did not contribute equally to the score. Those respondents who "Throw away „Bœf Cattle Time' without reading it" received a utilization score of 0. The remaining 6 items used to calculate the score were given weights 1-6 consecutively meaning the resulting score could range anywhere from 0, no utilization, to 21 indicating full utilization of "Beef Cattle Time." Actual utilization of the newsletter for respondents ranged from 2-16 with a mean of 7.80 and a standard deviation of 3.92. This finding indicates that although "Beef Cattle Time" is being utilized by respondents it is not being "heavily" utilized since the group mean of 7.80 is well below the midpoint of utilization score of 10.5.

Relationship between overall utilization score and selected demographic variables

To better understand the overall utilization of "Beef Cattle Time" an analysis was conducted in regards to demographic variables in the study. Three of those variables proved to be significantly related to the utilization of "Beef Cattle Time." As reported in Table 5, Type of cattle operation was significantly related to the utilization of "Beef Cattle Time." Cow-calf

operators' utilized "Beef Cattle Time" significantly more than did non-cow-calf operators. It should be noted at this time that there were three types of operators in this study, cow-calf, stockers, and purebred. Since respondents could have had any one or all three of these operations under their ownership each was analyzed separately. Only cow-calf operators were found to utilize "Beef Cattle Time" more "heavily" than non-cow-calf operators. There was no significant difference in the utilization of stocker versus non-stocker and purebred versus non-purebred.

As reported in Table 6 producers who were members of the Tennessee Cattlemen's Association were also utilizing "Beef Cattle Time" more "heavily" than were non-members and in Table 7 respondents who were graduates or currently enrolled in the Tennessee Master Beef Producer Program also utilized "Beef Cattle Time" more "heavily" than those who were not.

Objective 2 - Utilization of "other sources of information" on all respondents

While "Beef Cattle Time" is a source of information available for beef cattle producers there are also other numerous sources for them to utilize. In order to understand how "Beef Cattle Time" fits within other sources of information, a series of 18 sources of information (including "Beef Cattle Time") was included in the survey for them to describe how they used them. Table 8 describes their utilization of all the sources. As reported in Table 8 the most "heavily" utilized source of information for beef cattle producers is Cattle or farm magazines, Other cattle producers, and Local farm and feed dealers. The least utilized sources of information of those provided were Private consultants, Agriculture teachers, and University internet websites.

Overall utilization of "other sources of information" on all respondents

To understand utilization of all sources of information except "Beef Cattle Time" an overall "other utilization" score was calculated based on the remaining 17 items described above. Scores could range from 17 – 85 with a mid-point of 51. The actual overall "other utilization" score for respondents ranged from 17-85 with a mean of 45.7 and a standard deviation of 11.68 meaning that when considering all other sources available to them respondents were utilizing them slightly less than half as much as they could utilize them.

Relationship between overall utilization score of other sources of information and selected demographic variables

As with the utilization of "Beef Cattle Time" researchers studied the relationship between overall utilization of "other sources of information" and selected demographic variables. Of those studied only three were significantly related to the overall "other utilization" score. As reported in Table 9 those producers who were members of the Tennessee Cattlemen's Association were significantly more likely to utilize these other sources of information than were non-members, and in Table 10 those who were graduates or currently enrolled in the Tennessee Master Beef Producer Program were also significantly more likely to utilize these other sources than were non-members. Farming status also significantly related to the utilization of other sources of information. As reported in Table 11 retired farmers were significantly less likely to utilize these sources than were part-time or full-time farmers. However there was no significant difference between utilization by part-time and full-time.

Objective 2 - Utilization of "other sources of information" on readers

The purpose of this section was to describe the frequency distributions of how only *readers* of "Beef Cattle Time" utilized "other sources of information" to make management decisions on their operations. Table 12 describes the utilization scores for all sources of information ranged from a low of 1.53 (private consultants) and 1.90 (agricultural teachers) to a high of 3.50 (cattle or farm magazines) and 3.43 (other cattle producers), with "Beef Cattle Time" receiving an average of 3.35, slightly above average, and slightly below "cattle or farm magazines," and "other beef cattle producers."

Overall utilization of "other sources of information" on readers

In an effort to determine how "heavily" *readers* utilized other sources of information, the "other sources of information" utilization score which was computed above was used. Each of the17 statements were based on a 5 point scale. A score of 1 meant there was no utilization of the source of information and a score of 5 meant there was a full utilization of the source of information. Summed, these 17 statements produced a weighted score that could range from 17-85 with a mid-point of 51. A score of 17 represented no utilization of other sources and a score of 85 represented complete utilization of all other sources. The actual computed "other sources of information" utilization score for *readers* ranged from 24-62 with a mean of 46.81 and a standard deviation of 10.96 meaning that when considering all other sources available to them respondents were utilizing them slightly less than half as much as they could utilize them.

Relationship between "other sources of information" utilization score and selected demographic variables

The relationship between the computed "other sources of information" utilization score described above and five selected independent demographic variables were tested. The demographic variables included:

1. Age
2. Type of beef cattle operation
3. Farming status
4. Member of Tennessee Cattlemen's Association
5. Graduate or currently enrolled in the Tennessee Master Beef Producer Program

A t-test was used to test inferentially the relationships between the computed score of utilization of "other sources of information" and three of the five independent variables which were: type of operation, membership with Tennessee Cattlemen's Association, and graduate or currently enrolled in the Tennessee Master Beef Producer Program. An Analysis of Variance was used to describe the relationship between utilization of "other sources of information" with: age and farming status since these two nominally scaled variables had more than two levels. Of the five independent variables studied, membership with Tennessee Cattlemen's Association, and participation in Tennessee Master Beef Producer Program were significantly related to the level of utilization of "other sources of information."

As recorded in Table 13 those producers who are members of the Tennessee Cattlemen's Association utilized "other sources of information" more heavily than those non-members ($t=4.47$, $df=103$, $p=<.001$).

As recorded in Table 14 those producers who are graduates or currently enrolled in the Tennessee Master Beef Producer Program utilized "other sources of information" more heavily than those non-members ($t=4.60$, $df=104$, $p=<.001$).

Objective 3 – Satisfaction with "Beef Cattle Time" on readers

Researchers assessed the satisfaction level of respondents who actually *read* "Beef Cattle Time" with their operation. A series of 20 statements were developed to assess that satisfaction. While a description of individual responses was found in Table 15, individual means were less meaningful than overall satisfaction score therefore overall satisfaction score was calculated and interpreted for this study. Prior to interpreting the overall satisfaction score a Cronbach's Alpha coefficient was calculated for this attitudinal scale in order to determine whether all items equally contributed to that score. Analysis of Alpha indicated that two of the twenty items were not contributing to the overall score and they were therefore dropped. The Alpha score for the remaining 18 items was .97 indicating that the scale was very internally consistent with regard to its attempt at measuring overall satisfaction.

Overall satisfaction with "Beef Cattle Time" on readers

In order to determine the overall satisfaction, a score was computed based on satisfaction statements. The overall satisfaction score based on these 18 items could range from 18-90 with a mid-point of 54. The actual computed score for respondents ranged from 59-78 with a mean of 75.17 and a standard deviation of 12.78. This indicated that those who utilized "Beef Cattle Time" were fairly satisfied with it as a source of information since the score was considerably higher than the mid-point of 54.

Relationship between satisfaction score and selected demographic variables

In an effort to better understand satisfaction with the newsletter, satisfaction was studied with relationship to identified demographic variables. As reported in Table 16 only one independent variable significantly related to satisfaction scores. Cow-calf operators were significantly more satisfied with "Beef Cattle Time" than were non-cow-calf operators.

Objective 4 – Content benefits from "Beef Cattle Time" on readers

Since the content of "Beef Cattle Time" typically includes articles about specific beef management practices an analysis was conducted to determine which were most beneficial to respondents. There were seven content areas included in the survey for respondents to rate with regard to their benefit. As reported in Table 17 articles related to forage production, nutrition, and herd health were perceived to be most important however, all seven content areas including breeding and genetics, marketing, management and reproduction, were perceived to be above average in benefit. Therefore, it was concluded that all content areas in the newsletter were perceive to be of benefit by those who utilized them.

Overall content benefit from "Beef Cattle Time" on readers

In an attempt to measure overall content benefit, a summated score based upon the seven content areas was calculated. Scores could range from 7-35 with a mid-point of 21. The actual range of benefit scores that related to content benefit was 7-35 with a mean of 27.49 and a standard deviation of 5.16 indicating that perceived benefit from these content areas was greater than average.

Relationship of content benefit score with selected demographic variables

To better understand the perceived benefit of these content areas the relationship of the benefit score with selected demographic variables was also analyzed. As reported in Tables 18 and 19 there were two variables related. Cow-calf operator's perceived overall content benefit to be significant versus non-cow-calf operators. Graduates or producers currently enrolled in the Tennessee Master Beef Producer Program perceived content benefit to be significantly greater than those who were not.

Objective 4 - Personal benefits gained from reading "Beef Cattle Time" on readers

Another way to access benefit from readership of a newsletter is to determine how it impacts the readers themselves. In an attempt to do that a series of nine statements were developed for the survey to access how reading "Beef Cattle Time" may impact readers. As reported in Table 20 respondents felt that they received the most personal benefit from increasing their knowledge of beef production practices and their knowledge about up-coming beef cattle events. On a scale from 1-5, all nine personal benefit statements were rated above average. For those perceived to be lowest in personal benefit from reading "Beef Cattle Time" included their ability to "source beef cattle problems" and "change the way they manage their beef operations."

Overall personal benefit from "Beef Cattle Time" on readers

In continuing to access overall personal benefit, scores on individuals were summated to access overall personal benefit gained from reading "Beef Cattle Time." Since there were nine items listed the summated score could range from 9-45 with a mid-point of 27. The actual summated score for respondents was 9-45 with a mean of 33.69 and a standard deviation of 7.27.

This score indicated that respondents perceived their personal benefit from reading "Beef Cattle Time" to be fairly high as the average score was above the mid-point of 27.

Relationship of overall personal benefit score with selected demographic variables

With regard to the personal benefit scores and the relationship with selected demographic variables it was reported in Table 21, that cow-calf operators perceived that they received significantly more personal benefit from "Beef Cattle Time" than did non-cow-calf operators and as reported in Table 22 those producers who were graduates or currently enrolled in the Tennessee Master Beef Producer Program perceived they were receiving significantly more personal benefit than non-participants.

Objective 5 – Determining the future of "Beef Cattle Time" on readers

The final objective of this study was to try and determine the future of "Beef Cattle Time" as perceived by respondents. As reported in Table 23 when asked those who read "Beef Cattle Time" overwhelmingly indicated that it should be continued as a source of information for beef cattle producers. Further, in response to several open-ended questions more specific recommendations were given by those respondents and several themes that will be shared by researchers later in the implications section of this article.

Implications and Recommendations

Discussion

From the findings and conclusions written above there are a number of important implications with regard to "Beef Cattle Time" and how it is used by beef cattle producers in Tennessee. First, it should be noted that ***education level*** of readers significantly relates to whether or not respondents utilize "Beef Cattle Time." This finding is supported in earlier

literature in utilization. Those individuals who have completed a higher level of education are more likely to read materials given to them. These findings are consistent with other reports (Riley et al., 1991) that have found that the level of education impacts the readership of a newsletter. The lower the education level the less likely a newsletter will be read (Riley et al, 1991). As "Beef Cattle Time" continues to be developed by the Animal Science Extension Specialists they should continue to study the trends in regard to education level, as level of education increases readership of publication should increase.

With regard to ***utilization*** of "Beef Cattle Time" it was concluded that while producers do utilize the newsletter it is not the most important source they consider when making management decisions. Considering the various ways that the newsletter could be utilized, results of this study indicated that it was being somewhat under-utilized as a potential source of information. Further, when considering the utilization of "Beef Cattle Time" in relationship to other sources of information that producers can use, it fell somewhere slightly above the middle with regard to utilization of all sources of information. Sources of information considered to be more important to producers than "Beef Cattle Time" included: Cattle or farm magazine articles, other cattle producers, and Local farm and feed dealers. Keeping these facts in mind, one implication might be that beef cattle extension specialists should consider trying to tie the research based articles published in "Beef Cattle Time" to actual producer demonstration farms in Tennessee where similar results were found. The ability to prove that university research can be replicated by local producers is likely to increase the perceived benefit of articles in this newsletter. It should also be noted that while previous literature indicated that readers often filed newsletters for future use (Zimmer et al., 2006) fewer than 25% of "Beef Cattle Time" readers actually file it for

future use. Perhaps an attempt to link research findings with practical application on Tennessee beef farms would increase readers' perceptions of the need to utilize this newsletter.

The fact that producers utilize major cattle or farm magazines is supported in the literature (Ford & Babb, 1989; Jones et al., 1979 & Ortmann et al., 1993) and one should keep those findings in mind and not expect "Beef Cattle Time" to be doing more than it possibly can as it is still only a newsletter. However, knowledge of literature being reported in those cattle and farm magazines and the ability to relate "Beef Cattle Time" articles to those journals might also increase the utilization of the newsletter. Still, studies also reveal beef producers use of newsletters (Vergot III et al., 2005 & Clement et al., 1995). From these studies one can also conclude that newsletters are still in high demand and should therefore still be distributed.

Satisfaction with "Beef Cattle Time" as a newsletter is very high. As reported in the findings of this study respondents "Enjoy reading the newsletter," they "Enjoy receiving it," and they consider the "Content to be interesting." Further, there appears to be no strong recommendation that could be gleaned from satisfaction level with regard to changing format, font size, or color of paper. While there is not necessarily heavy agreement with the idea, some might conclude that newsletters should contain more articles. However, there is not sufficient data in this study to draw this conclusion. Generally, it can be concluded that those who read it are quite satisfied with the newsletter. The question still remains as to how one might increase the readership to include more than approximately half of those producers in Tennessee who read it.

When studying the ***benefits*** derived from reading "Beef Cattle Time" the researchers believe that more conclusive evidence about how to improve it is forth coming than that found with regard to overall satisfaction with the newsletter. While all topical areas in "Beef Cattle

Time" appear to be viewed as important, those viewed as most important are "Forage production," "Nutrition," and "Herd health." More emphasis in those topical areas may produce perception of greater benefit by readers of the newsletters. When studying ***personal benefits*** derived from reading the newsletter, producers acknowledged that the newsletter increased "Knowledge of beef production practices" and "Increased knowledge about up-coming beef cattle events," it is less likely to be viewed as something that "Helps them solve beef cattle problems" and "Changes the way they manage their operation." With these facts in mind it is important to remember that other sources of information viewed more important with regard to utilization of the newsletter include "Other beef cattle producers" and "Cattle and farm magazines." It is possible that further linkage of content of "Beef Cattle Time" with practical application of research findings on farms in Tennessee and other research reported in "cattle and farm magazines" might also increase the perceived benefit of "Beef Cattle Time" by producers.

When studying the ***demographic variables*** that statistically relate to utilization, satisfaction, and benefit some important variables were found to relate to these dependent variables. In almost all cases it was found that ***cow-calf producers*** are the heaviest utilizers, are more satisfied with, and perceived to gain more benefit from "Beef Cattle Time" while stockers and purebred producers do not find the newsletter to be more useful than all other respondents. Further, members of the Tennessee Cattlemen's Association and those who are graduates or currently enrolled in the Tennessee Master Beef Producer Program consistently draw the same conclusions. These are important findings in this study in that extension specialists can conclude that "Beef Cattle Time" is predominately being used by cow-calf operators, which is the largest type of cattle producer in Tennessee. Further, it appears that the Tennessee Cattlemen's Association and the Tennessee Master Beef Producer Program are doing commendable jobs in

using and or marketing this newsletter as a source of information for its constituencies'. The success gained in these two organizations should be further studied as a means of trying to determine how other beef cattle producer organizations might be utilized to increase the readership and utilization of "Beef Cattle Time" to reach the 50% of cattle producers in Tennessee who do not read "Beef Cattle Time." Keeping these findings in mind it should be remembered that the literature associated with newsletters supports the idea that information disseminated via newsletters solely is unlikely to have long term effects. A newsletter to supplement a program will provide more impact in the long run than would be just a newsletter or a program by itself (Lauckner & Singh, 2003). However, specialists should always continue to try and find linkages with other organizations and other sources of information that will increase the readership of this newsletter.

Finally with regard to the ***future*** of "Beef Cattle Time," a very important conclusion drawn from this study is that those who read "Beef Cattle Time" overwhelmingly think that it should be continued as a hard copy newsletter mailed to them from the extension office. Ninety-five percent of those who read "Beef Cattle Time" agreed with this statement. While that appears to be an over vote in continuing the newsletter one must also remember that slightly over 50 percent of producers in Tennessee do not read this newsletter. While non-readers predominantly chose to not answer the questions about how to improve "Beef Cattle Time" there were several themes worth mentioning that were offered by those who read the newsletter. With regard to how to improve the newsletter for those who said the newsletter should be continued the most common themes related to the fact that the newsletter provides useful information on cattle management practices and serves as a means of keeping producers up to date on current information. The six readers who said "Beef Cattle Time" should not be continued, offered very

little or if any input. While they perceive it as not worth continuing they had little evidence that could support a theme.

With regard as to how the newsletter might be improved a recurring theme related to the recommendation that the newsletter contain more articles on management practices. This would still be consistent with the findings earlier that more emphasis should be placed on beef management articles. Other than this suggestion the most commonly stated response to this question was that no improvements needed to be made to this newsletter. The last question asked was if there should be any other type of articles included in "Beef Cattle Time." Again consistent with previous finding most commonly mentioned was management practices.

Recommendations for the Future of "Beef Cattle Time"

Based upon the findings, conclusions, and implications discussed above the following recommendations are made to those who produce and distribute "Beef Cattle Time."

1. "Beef Cattle Time" should be continued in the immediate future as a direct mail piece from extension agents to the beef producers in Tennessee. However, as the internet becomes a more common tool for beef cattle producers as their education level increases this recommendation may change.
2. "Beef Cattle Time" should also continue to be provided in electronic format on the University of Tennessee Department of Animal Science website and consideration should be given to linking that source to all county extension where beef cattle are produced. Further, the availability of "Beef Cattle Time" in electronic format should be broadly disseminated to beef producers since many of them do own computers and have access to the internet on their farms. As mentioned above there may come a

time when the electronic version will replace the direct mail piece as a primary source of information but it is the researchers opinion that the time is not now.

3. The issue of non-readership by approximately half of the beef cattle producers in Tennessee is of particular concern in this study. As mentioned above it appears that organizations and programs like the Tennessee Cattlemen's Association and the Tennessee Master Beef Producer Program has been highly successful in marketing the newsletter as a source of information. Marketing of the newsletter should be increased to other cattle producers associations, if they exist. Further, the newsletter should be more heavily utilized in all Extension Animal Science educational programs statewide in an effort to reach a larger readership.
4. More emphasis on management practices should be included in articles selected for publication in "Beef Cattle Time."
5. An attempt should be made to link recommended practices written about in "Beef Cattle Time" to on-farm demonstrations conducted throughout the state.
6. Where possible attempts should be made to reference and discuss recommendations that are consistent with articles published in the more popular cattle and farm magazines read by producers.

Recommendations for Further Study

1. More needs to be known about the 50 percent of Tennessee cattle producers who don't read "Beef Cattle Time." Who are they? Where do they get information to help them reach decisions, what organization do they belong to, what sources of information do they use?

2. How do local county extension agents utilize “Beef Cattle Time” in their livestock education programs?
3. Retired cattle producers have been proven to utilize “Beef Cattle Time” significantly less frequently than do part-time or full-time producers. Since retired producers make up 18% of population currently reading “Beef Cattle Time” it may be worthwhile to further study retired producers. Who are retired cattle producers and how do they differ from part-time producers? Is this part of the population worthy of consideration when preparing educational programs in Extension Animal Science? This issue becomes more important as the trend continues for Tennessee cattle producers to increase in age.
4. This study should be replicated in approximately 5 years to see whether findings have changed over time. Further, if the recommendations in this study are implemented how have their implementation impacted the readership, utilization, satisfaction with, and benefits derived from “Beef Cattle Time.”

Bibliography

Aflakpui, G. K. S. (2007). Present outlook and transformation in the delivery of agricultural extension services: Implications for research extension farmer linkages. *Outlook on Agriculture,* 36(1), 35-39.

A Short History of Newsletters. (2003). Retrieved from http://spark.tp.edu.sg/dmr/package2/history.htm

Anthony, K., & Rennie, J. (1989). Finance and investment newsletters: A study of their content and use. *Business Information Review, 5(3).* doi: 10.1177/026638218900500304

Baumgartner, N., Riley, D., & Ostergren, C. (2000). Improving child rearing in fond du lac county: Evaluation of the parenting the 2nd & 3rd years instructional newsletter series. Retrieved from the University of Wisconsin Extension Parenting Website: http://74.125.155.132/scholar?q=cache:EqXSediMrHYJ:scholar.google.com/&hl=en&as_sdt=8000000000000

Bivins, T. H. (1992). *Fundamentals of successful newsletters: Everything you need to write, design and publish more effective newsletters*. Lincolnwood IL: NTC Publishing Group.

Blair, L. M. (1997). *Creating effective employee newsletters*. (Master's thesis, Rowan University). Retrieved from http://ref.lib.rowan.edu/rowan_theses/RU1997/0014crea.pdf

Bogenschneider, K., & Stone, M. (1997). Delivering parent education to low and high-risk parents of adolescents via age-paced newsletters. *Family Relations,* 46, 123-134.

Bond, W. J. (1992). *Home-Based Newsletter Publishing: A success guide for entrepreneurs*. New York, NY: McGraw-Hill.

Boyd, H. H. (2009). Ready- made resources for extension evaluation competencies. *Journal of Extension,* 47(3). Retrieved from http://www.joe.org/joe/2009june/tt1.php

Brashear, G. L., Hollis, G., & Wheeler, M. B. (2000). Information transfer to the Illinois swine industry: How producers are informed of new technologies. *Journal of Extension,* 38(1). Retrieved from http://www.joe.org/joe/2000february/

Broussard, S., & Floress, K. (2007). *Are newsletters effective? Assessing their roles as a communication tool*. Unpublished manuscript, Department of Forestry and Natural Resources, Purdue University Cooperative Extension Service, West Lafayette, IN. Retrieved from http://www.ces.purdue.edu/extmedia/FNR/FNR-269-W.pdf

Brown, T. G. & Collins, A. J. (1978). Large commercial family farms: Informational needs and sources. Report of the National Extension Study Committee. University of Missouri, Columbia MO.

Bruhn, T. (1999). *Review of current newsletter literature with today's novice publisher in mind*. (Master's thesis, Rowan University). Retrieved from http://ref.lib.rowan.edu/rowan_theses/RU1999/0139REVI.pdf

Clement, D. M., Richardson, J. G., & Mustian, R. D., (1995, January). Level of use of extension by two diverse audiences and their preferred means for receiving extension information. Paper presented to the Agricultural Communications Section, Southern Association of Agricultural; Scientists, New Orleans, Louisiana.

Davis, J. L. (1990). Employee health newsletters: Analysis of characteristics. *Journal of the American Association Occupation of Health,* 38(8), 360-367.

Devereaux, M. (2006). Communicating with your teen. Retrieved from http://www.utextension.utk.edu/publications/spfiles/SP681-X.pdf

Dickinson, N., & Cudaback, D. (1992). Parent education for adolescent mothers. *Journal of Primary Prevention,* 13(1), 23-35.

Fanson, B. A. (1994). *Producing a First-Class Newsletter*: A guide to planning, writing, editing, designing, photography, production, and printing. Canada: International Self-Counsel Press Ltd.

Foltz, J., Lanclos, K., Guenthner, J., Makus, L., & Sanchez, W. (1996). The market for information and consultants in Idaho agriculture. *Agribusiness,* 12(6), 569-581.

Ford, C. L. (1995). Educational priorities of small farmers in west Tennessee. *Journal of Agricultural Education,* 36 (1), 31-37.

Ford, S. A., & Babb, E. M. (1989). Farmer sources and uses of information. *Agribusiness,* 5(5), 465-476.

Friedman, S. (1992). 12 ways to get the most from your marketing newsletter. *Sales and Marketing Management,* 91.

Futris, T. G., Bloir, K., & Szu-Ying Tsai, D. (2005). Strengthening marriages: An evaluation and assessment of a couple's and marital enrichment newsletter. *Journal of Extension* 43(5). Retrieved from http://www.joe.org/joe/2005october/rb8.php

Garton, M., Hicks, K., Leatherman, M., Miltenburger, M., Mulkeen, M., Nelson Mitchell, L., & Winland, C. (2003). Newsletters: Treasures or trash? Parenting newsletter series results in positive behavior changes. *Journal of Extension,* 41(1). Retrieved from http://www.joe.org/joe/2003february/rb5.shtml

Gloy, G. A., Akridge, J. T. & Whipker, L. D. (2000). Sources of information for commercial farms: Usefulness of media and personal sources. *International Food and Agribusiness Management Review,* 3(2), 245-260.

Hamilton, E. A. (1996). *Newsletter design: A step-by-step guide to creative publications*. New York: Van Nostrand Reinhold.

Harmon, A. H., Grim, B. J, & Gromis, J. C. (2007). Improving nutrition education newsletters for the food stamp eligible audience. *Health Promotion Practice, 8(4),* 394-402. doi: 10.1177/1524839907304942

Hudson, H. P. (1982). *Publishing Newsletters*. New York, NY: Charles Scribner's Sons.

Israel, G. (1991). Reaching extension's clientele: Exploring patterns of preferred information channels among small farm operators. *Southern Rural Sociology*. 8, 15-32.

Jones, C., Sheatsley, P. B., & Stinchcombe, A. L. (1979). Dakota farmers and ranchers evaluate crop and livestock surveys (NORC Report No. 128). Chicago: National Opinion Research Center.

Kiernan, N. E. (2001). When should I evaluate a newsletter?: Tipsheet #21, University Park, PA: Penn State Cooperative Extension. Available at http://www.extension.psu.edu/evaluation/pdf/TS21.pdf

Kiernan, N. E. (2001). First steps in evaluating a newsletter: Likely objectives: Tipsheet #43, University Park, PA: Penn State Cooperative Extension. Available at : http://www.extension.psu.edu/evaluation/pdf/TS43.pdf

Kiernan, N. E. (2001). A mail survey to older citizens?: Tipsheet #48, University Park, PA: Penn State Cooperative Extension. Available at: http://extension.psu.edu/evaluation/pdf/TS48.pdf

Lamb S. & Allen, N. (2002). Create a garden pond for wildlife. Retrieved from http://extension.oregonstate.edu/catalog/html/ec/ec1548/

Lancaster, K. J., Wright, H. S., Ahern, F., Achterber, C., & Davis, S. T. (1997). Evaluation of a nutrition newsletter by older adults. *Journal of Nutrition Education,* 29(3), 145-151.

Lauckner, B., Singh, R. (2003). Assessing the impact of information learnt from a newsletter and a training seminar. *Information development,* 19(2) 103-110.

Lawrence, J.D., Schuknecht, S. (2005). Iowa beef producer profile 2005: A survey of Iowa cow-calf and feedlot owners by the Iowa beef center. Retrieved from http://www.iowabeefcenter.org/content/2005SurveyReport.pdf

Lyons, J. J. (1997). Small flock series: Managing a family chicken flock. University of Missouri Extension. Retrieved from http://extension.missouri.edu/publications/DisplayPub.aspx?P=G8350

Lyon, W. F. (1998). Extension factsheet: Praying mantis. Retrieved from http://ohioline.osu.edu/hyg-fact/2000/pdf/2154.pdf

Maddox, S. J. (2001). *Determining effective communication strategies for agricultural organizations to provide agricultural producers the knowledge necessary to promote change and adoption in the 21st century*. (Unpublished doctoral dissertation). North Carolina State University, Raleigh, NC.

Matz, H. (2006). How to spread the word: An aid in producing effective newsletters. *Medical Practice Communicator*. As cited in communication briefings. Retrieved from http://www.tgoa-mgca.org/pdfs/RedBookUpdates/howtospreadtheworld1206.pdf

Miller, L. E. & Smith, K. (1983). Handling nonresponse issues. *Journal of Extension*. v21 p45-50 Sep-Oct 1983.

Minter, B. (1989). Starting a Newsletter. *Public Relations Journal*, 45(7), 30.

Mitchell, A. A. (1988). Developmental theory and career newsletters. *Journal of Career Development, 15(2),* 1-11. doi: 10.1177/089484538801500204

Murphy, D. R. (1960). *What farmers read and like*. Ames, IA: Iowa State University Press.

Nelson, P. (1993). *How to create powerful newsletters: Easy ways to avoid the pitfalls 80 percent of all newsletters face*. Chicago: Bonus Book.

Nelson, P. T. (1986). Newsletters: An effective delivery mode for providing educational information and emotional support to single parent families? *Family Relations,* 35(1), 183-188.

Ngathou, I. N., Bukenya, J. O., & Chembezi, D. M. (2005). Information sources preferred by limited resource farmers in using agricultural risk tools. Retrieved from http://ageconsearch.umn.edu/bitstream/35581/1/sp05ng01.pdf

Obahayujie, J. & Hillison, J. H. (1988). Now hear this/delivery method for farmers. *Journal of extension*, 26(1).

Olson, K. C. (2009). *Beef Tips,* 1-4. Retrieved from www.asi.ksu.edu/beeftips

Ortmann, G. F., Patrick, G. F., Musser, W. N., & Doster, D. H. (1993). Use of private consultants and other sources of information by large cornbelt farmers. *Agribusiness,* 9(4), 391-402.

Orr, C. L. (2003). Informational needs of limited-scale landowners within the urban/rural interface of Lincoln County Oklahoma (Masters, thesis, Oklahoma state university, 2003).

Paterson, J. A. (2007). The extension service and the beef industry: Yesterday vs. today. V58 department of animal and range sciences, Montana state university, Bozeman mt, usa, proceedings, western section, American society of animal science.

Patrick, G. F. and Ullerich, S. (1996). Information sources and risk attitudes of large scale farmers, farm managers, and agricultural bankers. *Agribusiness* 12(5), 461-471.

Provost, S. (2003). Evaluation of a public health newsletter intended for travel agents. *Journal of Travel Med,* 10(3), 177-184.

Rasmussen, W. D. (1989). *Taking the university to the people: Seventy five years of cooperative extension*. Iowa State University Press.

Riley, D., Meinhardt, G., Nelson, C., Salisbury, M., & Winnett, T. (1991). How effective are age-paced newsletters for new parents? A replication and extension of earlier studies. *Family Life Education*, 40(3), 247-253.

Schafer, S. R. (2006). Clientele perceptions of the university of the Wyoming cooperative extension service livestock program. *Journal of extension,* 44(2).

Schnitkey, G., Batte, M., Jones, E., & Botomongo, J. (1992). Information preferences of Ohio commercial farmers: Implications for extension. *American Journal of Agricultural Economics,* 74(2), 486-496.

Sherman, S. (1997). Survival of the fittest: NEBA seminar stresses newsletter and Web site design, co-op money as competitive tools. *Publishers Weekly,* 244 (22), 27-29.

Sosnin, B. (1996). Corporate Newsletters Improve Employee Morale. HR Magazine. 106-110.

Suvedi, M., Campo, S., & Lapinski, M. K. (1999). Trends in Michigan farmers' information seeking behaviors and perspectives on the delivery of information. *Journal of Applied Communications,* 83(3), 33-50.

University of Tennessee Extension Publications Policies and Procedures Manual. (2009). Retrieved from http://www.utextension.utk.edu/resources/pdf/pubpolicies_apr-09.pdf

Vergot III, P., Israel, G., & Mayo, D. E. (2005). Sources and channels of information used by beef cattle producers in 12 counties of the northwest Florida extension district. *Journal of Extension,* 43(2), 1-11.

Woodbury, M. R. (1988). A survey of the readership of the Canadian veterinary journal. *Canadian Veterinary Journal,* (29) 890-895.

Zimmer, B. P., Shriner, J. A., & Scheer, S. D. (2006). Use and evaluation of a statewide 4-h volunteer newsletter. *Journal of Extension,* 44(1), Retrieved from http://www.joe.org/joe/2006february/rb8.php

Appendices

Appendix A

Beef Cattle Information by Region

Eastern Region	Number of Beef Cow Operations	Number of Beef Cows per County	Number of Beef Cattle Time Received	Number of Surveys to be Distributed	Number of Surveys to be Distributed (rounded number)
ANDERSON	307	n/a	375	5.075099188	5
BLEDSOE	366	16820	380	6.050443983	6
BLOUNT	657	16994	65	10.86104289	11
BRADLEY	589	15532	240	9.736916682	10
CAMPBELL	266	6577	102	4.397317211	4
CARTER	260	5697	120	4.298129605	4
CLAIBORNE	741	n/a	797	12.24966937	12
COCKE	419	9501	10	6.926601171	7
CUMBERLAND	467	13928	450	7.720102022	8
FENTRESS	350	13251	0	5.785943699	6
GRAINGER	657	15975	82	10.86104289	11
GREENE	2005	45201	5	33.14519176	33
HAMBLEN	515	13727	100	8.513602872	9
HAMILTON	305	n/a	350	5.042036652	5
HANCOCK	307	9062	125	5.075099188	5
HAWKINS	1104	24150	172	18.25051955	18
JEFFERSON	802	20601	575	13.25807671	13
JOHNSON	256	n/a	225	4.232004534	4
KNOX	633	12916	700	10.46429246	10
LOUDON	428	11413	0	7.075382581	7
MCMINN	732	17628	200	12.10088797	12
MEIGS	241	7748	0	3.984035519	4
MONROE	589	15863	400	9.736916682	10
MORGAN	229	n/a	200	3.785660306	4
POLK	162	3078	89	2.678065369	3
RHEA	275	n/a	200	4.546098621	5
ROANE	321	7078	270	5.306536936	5
SCOTT	112	2265	75	1.851501984	2
SEVIER	363	n/a	334	6.000850179	6
SULLIVAN	669	14443	305	11.0594181	11
UNICOI	36	540	30	0.595125638	1
UNION	319	8212	325	5.2734744	5
WASHINGTON	1048	24317	100	17.32476856	17
TOTAL	**16530**		**7401**	**273.261855281**	**273**

Central Region	Number of Beef Cow Operations	Number of Beef Cows per County	Number of Beef Cattle Time Received	Number of Surveys to be Distributed	Number of Surveys to be Distributed (rounded number)
BEDFORD	810	32648	500	13.39032685	13
CANNON	454	14729	40	7.505195541	8
CHEATHEAM	285	7030	300	4.711411298	5
CLAY	303	n/a	200	5.008974117	5
COFFEE	521	14771	550	8.612790478	9
DAVIDSON	205	3290	10	3.388909881	3
DEKALB	401	n/a	21	6.629038353	7
FRANKLIN	622	17718	5	10.28244852	10
GILES	1154	33998	225	19.07708294	19
GRUNDY	154	4802	75	2.545815228	3
JACKSON	356	8968	110	5.885131305	6
LINCOLN	1112	36013	303	18.3827697	18
MACON	663	18957	150	10.96023049	11
MARION	258	6845	155	4.26506707	4
MARSHALL	563	18999	0	9.307103722	9
MAURY	964	30719	700	15.93614207	16
MOORE	233	6964	100	3.851785377	4
OVERTON	651	19445	5	10.76185528	11
PICKETT	254	9760	20	4.198941999	4
PUTNAM	587	13212	250	9.703854147	10
ROBERTSON	686	20280	300	11.34044965	11
RUTHERFORD	768	17048	25	12.6960136	13
SEQUATCHIE	126	n/a	100	2.082939732	2
SMITH	630	15700	150	10.41469866	10
SUMNER	907	25063	580	14.99385981	15
TROUSDALE	187	n/a	150	3.091347062	3
VAN BUREN	133	5551	200	2.198658606	2
WARREN	670	21270	610	11.07594937	11
WHITE	696	24500	160	11.50576233	12
WILLIAMSON	701	19347	55	11.58841867	12
WILSON	953	26857	700	15.75429813	16
TOTAL	**17007**		**6749**	**281.14727**	**282**

Western Region	Number of Beef Cow Operations	Number of Beef Cows per County	Number of Beef Cattle Time Received	Number of Surveys to be Distributed	Number of Surveys to be Distributed (rounded number)
BENTON	213	n/a	20	3.521160023	4
CARROLL	295	6508	240	4.876723975	5
CHESTER	171	4425	250	2.826846779	3
CROCKETT	152	4044	100	2.512752692	3
DECATUR	249	n/a	50	4.11628566	4
DICKSON	641	13439	700	10.5965426	11
DYER	190	5947	10	3.140940865	3
FAYETTE	318	12833	575	5.256943132	5
GIBSON	353	11226	300	5.835537502	6
HARDEMAN	223	n/a	75	3.6864727	4
HARDIN	270	6271	200	4.463442282	4
HAYWOOD	108	3045	100	1.785376913	2
HENDERSON	404	12784	560	6.678632156	7
HENRY	380	10900	0	6.281881731	6
HICKMAN	362	9769	356	5.984318912	6
HOUSTON	227	6013	100	3.752597771	4
HUMPHREYS	374	10940	300	6.182694124	6
LAKE	3	n/a	1	0.049593803	0
LAUDERDALE	135	n/a	185	2.231721141	2
LAWERENCE	1025	32629	203	16.9445494	17
LEWIS	133	3262	100	2.198658606	2
MADISON	190	n/a	320	3.140940865	3
MCNAIRY	250	6550	100	4.132816928	4
MONTGOMERY	467	16912	400	7.720102022	8
OBION	226	n/a	125	3.736066503	4
PERRY	120	3846	125	1.983752125	2
SHELBY	182	n/a	120	3.008690724	3
STEWART	156	n/a	103	2.578877763	3
TIPTON	219	5505	125	3.620347629	4
WAYNE	408	12099	425	6.744757227	7
WEAKLEY	363	8585	425	6.000850179	6
TOTAL	**8807**		**6693**	**145.5908747**	**148**
OVERALL TOTAL	**42,344**		**20843**		**703**

Appendix B

Cover letter to Tennessee Beef Cattle Producers

(Enter Date)

(Enter address)

Dear ___(producer name)____:

"Beef Cattle Time", is a quarterly newsletter that has served as a source of information for Tennessee beef cattle producers since 1974. The purpose of this newsletter is to provide you information that would be beneficial to you in managing your operation. We hope that it has been beneficial to you.

While "Beef Cattle Time" has been published for 36 years, an evaluation of the impact of the newsletter as a source of information has never been attempted. As a potential recipient of "Beef Cattle Time", would you please take some time and complete the attached survey and use the enclosed, self addressed, stamped envelope and return in to me. **However, if you are not familiar with "Beef Cattle Time," please still respond to the questions specified for you in the beginning of the survey and return it to me. In doing this you will be dropped from the mailing list and will not be sent follow-up requests or reminders to return your survey.**

Your feedback is important in determining the impact of "Beef Cattle Time" and it will also be used to plan future Extension educational programs in producing and marketing beef cattle. This is a research project and your participation in our evaluation is voluntary. We would greatly appreciate your assistance.

Please note you will find an identification number at the top right corner of the survey. This is added as a means of follow-up of non-responses only, to assure that you have an opportunity to participate in the evaluation. Your name or any other identifying characteristic will NOT be used in writing the summary report. Only aggregate data from all responses will be reported. To facilitate a timely completion of this project, please respond to the questions as completely as possible and return your survey to me on or before **(Date)**

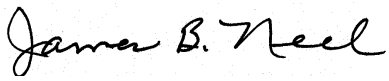
Further, please do not hesitate to contact me by phone or email, if you have additional questions about this study.

Thank you for taking time from your busy schedule to complete this survey.

Sincerely,

Christina Perez
Agricultural Leadership, Education and Communications
Graduate Assistant
(865) 974-7371
cperez4@utk.edu

Sincerely,



James B. Neel
Professor
Animal Science Department
jneel@utk.edu

Appendix C

Letter to Extension Agents

ATTENTION AGENTS:

Approved by: (Regional Program Leader)

My name is Christina Perez. I am a graduate student at the University of Tennessee pursuing my Masters Degree in Agriculture Education. My thesis for my Masters Degree is an evaluation of the quarterly newsletter "Beef Cattle Time". The purpose for this study is to assess the impact "Beef Cattle Time" has had on beef producers in Tennessee. For 36 years, this newsletter has been in circulation; however, there has been no evaluation of its impact as perceived by the cattle producers of Tennessee. This study will aid in determining the success and future of "Beef Cattle Time".

I have met with the Regional Agriculture Program Leaders and have gotten their support and cooperation to conduct this study. Now, I need your help and support.

A survey has been developed and will be mailed to a specified number of cattle producers in your county for reply. Your producers will receive a letter and a survey along with a self-addressed envelope for returning the survey to me.

A selected number of producers from your county will be needed in order to conduct this study. The number of producers to be surveyed is based on the beef producers in your county. I need you to send me an electronic copy of your beef producer mailing list in your county that includes their names and addresses. Please use my email address provided below to send me your list. Once received, I will randomly select producers from the list to participate in my study.

I have included a copy of the "Beef Cattle Time" survey and the letter to the producer for your information. These documents are examples of what I will be sending out to the producers. If you have any questions, please contact either me, your Regional Agriculture Program Leader or Dr. Jim Neel.

Your help and cooperation with this study will be greatly appreciated.

Sincerely,

Christina Perez
University of Tennessee
Agricultural Leadership, Education and Communications
Graduate Assistant
(865) 974-7371
cperez4@utk.edu

Appendix D

Letter to Regional Agriculture Extension Program Leaders

(Enter Date)

(Enter Address)

Dear (name of program leader),

The purpose of this letter is to provide you with the materials and information discussed during the Agriculture Program Meeting a few weeks ago.
Included is an attachment of the "Beef Cattle Time" survey along with a letter to the Extension agents that you will either give or forward to them. In this letter, I am asking them to send me an electronic copy of their mailing list of beef producers. From this list we will randomly select the appropriate number of producers to participate in the evaluation. This is a change from the selection procedure that was discussed during the meeting. The list of producers should enable an improved "random" selection of producers. You expressed concern about this during the meeting and we took that under consideration and decided to modify the procedure. Thank you for the input.
Again, thank you for your help and support in the evaluation of the impact of "Beef Cattle Time". Your assistance will definitely contribute to the success of this study.

Sincerely,

Christina Perez
University of Tennessee
Agricultural Leadership, Education, and Communications
Office phone: (865) 974-7371 Fax number: (865) 974 - 7383
cperez4@utk.edu

Appendix E

Survey Instrument

UT Extension

BEEF CATTLE TIME

The University of Tennessee
"Beef Cattle Time" Evaluation

Please Read!
You may have read the currently circulating "Beef Cattle Time" newsletter. If you receive it or are familiar with it, please complete this survey and return it using the self addressed envelope provided. If you are not familiar with "Beef Cattle Time" please answer questions 1 - 12, 15 – 33, and 35 then return it using the self addressed envelope provided. **Thank you for your participation!**

This survey contains five parts. Part I contains questions regarding the demographics of the producer. Part II pertains to the utilization of "Beef Cattle Time" (BCT). Part III asks about your level of satisfaction of the newsletter and Part IV wants to know the benefits you have received from reading "BCT". Part V wants to know your opinion on the future of "BCT".

PART I
The following are questions regarding the characteristics of you, the producer. Please check the answer or fill in the response that best applies to you.

1.) County: _____

2.) Age:
Less than 20 ___ 20-29___ 30-39_____ 40-49 ____ 50-59 ____ 60-69 ____
70 + ___

3.) Level of education completed:
High school/GED _____ Some College _____ Bachelor's degree ____
Master's degree _____ Doctorate ___

4.) Years involved in the beef cattle industry?

No experience ___ Less than 10 years ___ 10-19 years _____ 20-29 years _
30-39 years___ 40-49 years _____ 50-59 years _____ 60-69years___
70+ year___

5.) What type of beef cattle operation are you engaged?

Cow-calf ____Stocker ____ Purebred ____Other: _____

6.) Farming status:

Full-time ____Part-time ____Retired ____

7.) Do you own a computer?

Yes ___ No ___

8.) If yes, do you have Internet access?

Yes ___ No ___

9.) Are you a member of the Tennessee Cattlemen's Association?

Yes ___ No ___

10.) Are you a graduate or currently enrolled in the Tennessee Master Beef Producer Program?

Yes ___ No ___

11.) What is the current size (number of beef cows) of your beef cattle operation?

0-25 _____ 26-50 _____ 51-95 _____ 96-100 ___ 101-150 ___ 151+ ____

12.) How many acres of land that you own and/or lease are included in your cattle operation?

Less than 100 _____ 100-200 _____ 201-400 _____401-600 _____
601-800 _____ 801-1000 _____ 1001 + _____

PART II

We hope that you have enjoyed reading "Beef Cattle Time". We also hope that you have put the information in the newsletter to good use as well as utilized it as one of your top sources of information. Please respond to the following questions as best as you can.

13.) What do you do with "Beef Cattle Time" when you receive it? **Check all that apply.**

_____ Throw it away without reading it
_____ Give it to another beef producer without reading it
_____ Skim through it
_____ Read articles that apply only to me
_____ Read the whole newsletter
_____ Read it and then put it on file for future reference
_____ Read it and then put the information to use
_____ Give it to another beef producer after reading it
_____ Throw it away after reading it
_____ Other (please specify): _____

14.) How do you receive "Beef Cattle Time"?

Mail from Extension agent __ Bulletin rack in Extension office _____

The UT Animal Science website____ Livestock sale barns ____

Businesses ___ Other (please specify): _____

Beef producers use a variety of sources to obtain beef cattle information. The following are sources of information that you might utilize to maintain your beef cattle operation. Rate the following sources you might use when seeking information about beef production.

1= Never 2= Rarely 3= Sometimes 4= Usually 5= Always

15.) "Beef Cattle Time"	Never	1 2 3 4 5	Always
16.) Other Beef Cattle Newsletters	Never	1 2 3 4 5	Always
17.) Other Extension Publications	Never	1 2 3 4 5	Always
18.) Cattle or Farm Magazines	Never	1 2 3 4 5	Always
19.) Newspapers	Never	1 2 3 4 5	Always
20.) Television (example: RFD-TV)	Never	1 2 3 4 5	Always
21.) Extension Meetings	Never	1 2 3 4 5	Always
22.) University Internet Websites	Never	1 2 3 4 5	Always
23.) University Extension Specialists	Never	1 2 3 4 5	Always
24.) Visits with County Extension Agents	Never	1 2 3 4 5	Always
25.) Local Farm and Feed Supply Dealers	Never	1 2 3 4 5	Always
26.) National Resource Conservation Service Agents	Never	1 2 3 4 5	Always
27.) Veterinarians	Never	1 2 3 4 5	Always
28.) Other Cattle Producers	Never	1 2 3 4 5	Always
29.) Private Consultants	Never	1 2 3 4 5	Always
30.) Agriculture Teachers	Never	1 2 3 4 5	Always
31.) Local Livestock Associations	Never	1 2 3 4 5	Always

32.) State Livestock Associations Never 1 2 3 4 5 Always

33.) Other (please specify): Never 1 2 3 4 5 Always

_____

PART III

Since its establishment, "Beef Cattle Time" has predominantly remained the same in regard to its format, distribution, circulation and general content. It is in your best interest that we know your **level of satisfaction** for these newsletter elements. Please select the best response to these questions and statements.

34.) Are you satisfied with the delivery method of "Beef Cattle Time"?
Yes ___ No ___

34a.) If you responded yes, go to question 36. If you responded no, proceed to question 35.

35.) Which of the following would be the most preferred way for you to receive "Beef Cattle Time"?
Mail from Extension agent _____ Bulletin rack in Extension office _____
The UT animal science website_____ Livestock sale barns _____
Businesses ___ Other (please specify): _____

36.) Are you satisfied with the number of newsletters issued per year?
Yes ___ No ___

37.) If no, when would you prefer to receive them?
_____ Once a year
_____ Once every 6 months
_____ Once every 4 months
_____ Once every 2 months
_____ Once a month

"Beef Cattle Time" is geared toward a certain type of audience, beef cattle producers. However, there might be some aspects of the newsletter that appeal to some producers and, yet other aspects that they might not agree with. The following are statements about the appearance, content, and format of "Beef Cattle Time" as well as statements regarding your feelings about it. Rate the following statements based on your level of agreement or disagreement:
1= Disagree 2= Slightly Disagree 3= Neutral 4= Slightly Agree 5= Agree

38.) I look forward to **receiving** the newsletter. Disagree 1 2 3 4 5 Agree

39.) I enjoy **reading** the newsletter. Disagree 1 2 3 4 5 Agree

40.) I am satisfied with the **size of font**. Disagree 1 2 3 4 5 Agree

41.) I am satisfied with the **color** of the paper. Disagree 1 2 3 4 5 Agree

42.) I am satisfied with the **number of pages**. Disagree 1 2 3 4 5 Agree

43.) I am satisfied with the **present format**. Disagree 1 2 3 4 5 Agree

44.) The topic **headings** help me locate the information I need. Disagree 1 2 3 4 5 Agree

45.) The newsletter is **timely.** Disagree 1 2 3 4 5 Agree

46.) The newsletter content is **interesting**. Disagree 1 2 3 4 5 Agree

47.) The newsletter content is **informative**. Disagree 1 2 3 4 5 Agree

48.) I am satisfied with the **subject content**. Disagree 1 2 3 4 5 Agree

49.) The newsletter should contain **more articles**. Disagree 1 2 3 4 5 Agree

50.) The articles are **easy to read**. Disagree 1 2 3 4 5 Agree

51.) The information is **repetitive**. Disagree 1 2 3 4 5 Agree

52.) The information contained in the articles is **current**. Disagree 1 2 3 4 5 Agree

53.) The information in the newsletter is **accurate**. Disagree 1 2 3 4 5 Agree

54.) The information in the newsletter is **practical**. Disagree 1 2 3 4 5 Agree

55.) The depth of information contained in each article is **sufficient**. Disagree 1 2 3 4 5 Agree

56.) "Beef Cattle Time" is an important **asset** to my operation. Disagree 1 2 3 4 5 Agree

57.) Beef Cattle Time is easily **accessible**. Disagree 1 2 3 4 5 Agree

PART IV

"Beef Cattle Time" contains articles that discuss a variety of beef production practices, which were designed to be beneficial to you and your operation. We want to know what **benefits you have gained** as a result of receiving "BCT", what it has done for you and how you are better off because of it.

Rate the following statements on a scale from 1-5 which best represents the benefits you have received from reading "Beef Cattle Time" for the following beef cattle production practices:
1= Not useful 2= Somewhat not useful 3= Neutral 4= Somewhat useful 5= Very useful

58.) Breeding and genetics	Not Useful	1	2	3	4	5	Very Useful
59.) Nutrition	Not Useful	1	2	3	4	5	Very Useful
60.) Forage Production	Not Useful	1	2	3	4	5	Very Useful
61.) Marketing	Not Useful	1	2	3	4	5	Very Useful
62.) Management	Not Useful	1	2	3	4	5	Very Useful
63.) Herd Health	Not Useful	1	2	3	4	5	Very Useful
64.) Reproduction	Not Useful	1	2	3	4	5	Very Useful

We hope that "Beef Cattle Time" has been a benefit to your beef operation. Below are statements about benefits you may have received from the newsletter. Please finish the bolded sentence below by rating the following statements based on your level of agreement or disagreement:
1= Disagree 2=Slightly Disagree 3= Neutral 4= Slightly Agree 5= Agree
As a result of reading "Beef Cattle Time" I:

65.) Have increased my **knowledge** of beef production practices.	Disagree	1	2	3	4	5	Agree
66.) Have seen an increase in **profit** on my operation.	Disagree	1	2	3	4	5	Agree
67.) Have **new ideas** of production practices that I can apply in my operation.	Disagree	1	2	3	4	5	Agree
68.) Know about upcoming **beef cattle events**.	Disagree	1	2	3	4	5	Agree
69.) Have **additional resources** and references to help me to maintain my operation.	Disagree	1	2	3	4	5	Agree

70.) Know about the **latest** beef cattle Production practices. Disagree 1 2 3 4 5 Agree

71.) Have **changed** the way I manage my beef operation. Disagree 1 2 3 4 5 Agree

72.) Have been able to **solve** my beef cattle problems. Disagree 1 2 3 4 5 Agree

73.) Have been able to take the information and apply it in my operation. Disagree 1 2 3 4 5 Agree

PART V

You now have the opportunity to give us any feedback that you feel would further help us in determining the future of "Beef Cattle Time". We greatly appreciate you for taking the time to complete this survey.

74.) Should Beef Cattle Time be continued?
Yes ___ No ___

If yes, why? _____

If no, why?
_____

75.) What are some suggestions for improving "Beef Cattle Time"? _____

76.) List any other beef production practices or information, which you feel should be included in "Beef Cattle Time".
_____

Appendix F

Reminder Post Card

Dear Producer,

A few days ago, you should have received a request to participate in the "Beef Cattle Time" survey. It was sent to your address as part of our effort to determine the success and future of the newsletter.

It is important that you respond. If you have already mailed back your survey, please accept my sincere thank you. There is no need to provide your answers again. If you have not responded, please provide your information as soon as possible. As stated before if you do not receive "Beef Cattle Time," please still respond to the questions designated for you in the survey.

If you have questions or need help completing your questionnaire, please feel free to call the number listed below. Thank you.

Sincerely,

Christina Perez
UT-Graduate Teaching Assistant
Agricultural Leadership Education & Communications
(865) 974-7371

Appendix G

Second Cover Letter to Beef Producers

(Enter Date)

(Enter address)

Dear (Name of Producer):

Approximately 4 weeks ago you were mailed the "Beef Cattle Time" survey and a letter asking for your assistance in providing feedback. This study is a way to better serve the beef producers of Tennessee. Beef producers throughout Tennessee just like yourself were randomly selected out of a large pool to participate in this study. The data collected from these surveys will provide the creators of "Beef Cattle Time" insight as to what type of information producers are in need of. As of this day I have still not received a survey from you. While your participation is voluntary we would still greatly appreciate your input. Please try to complete and return the survey using the free return envelope provided for you.

Thank you for taking time from your busy schedule to complete this survey.

Sincerely,

Christina Perez
Agricultural Leadership, Education and Communications
Graduate Assistant
(865) 974-7371
cperez4@utk.edu

Sincerely,

James B. Neel
Professor
Animal Science Department
jneel@utk.edu

Appendix H

Producers Responses to Open-ended Questions to the Future of "Beef Cattle Time"

Why should "Beef Cattle Time" be continued?

1. It is an easy way to get the know-how on today's information.
2. With the price of fertilizer, fuel, oil and fencing, etc we need any facet that may help us.
3. You provide information I need and will use, because I trust your information.
4. It is interesting, and has information that may or may not be of use but gives it to producers for their choice.
5. It helps me plan on marketing calves.
6. For better management ideas that I can gain for my operation.
7. Lot of the time small farmers don't have up-to-date knowledge of what is going on.
8. To continue to help & remind the producer of the practices they should do or that will help them. We sometimes forget as we age.
9. It is a helpful tool on many levels. Easily accessible (mailed to me).
10. Get information that may not be readily available at other locations.
11. Good source of correct information.
12. It is very helpful.
13. Nice articles.
14. We need cattle to adequately use our land. The herd size needs to be large enough to support the service we need of veterinary, sale barns.
15. To better keep producers in tune with the time.
16. It helps in making decisions with beef cattle management.
17. Enjoy information.
18. It is informative.
19. It provides new ideas and reminds me of practices that I need to be doing in a timely manner.
20. Good publication, very informative.
21. All information.
22. Practical information that can be used on beef cattle operations.
23. Any information is good.
24. Beef Cattle Time has information that is very useful in my beef operation.
25. I need in these times more information to be a better producer.
26. Lots and lots of information.
27. Most farmers would benefit from the information listed.
28. Great information.
29. Good to know what research is coming up with how to improve beef profitability.
30. Good information on topics some people can apply to their operation.
31. It helps to keep us current with new industry trends and guidelines and management practices in order to produce a safer nutritious product for the consumer.
32. It keeps me up to date on the latest practices and programs available.
33. It is an important beef cattle resource.
34. It helps farmers stay informed.
35. It helps me do what I do and expands my perspective.
36. For the information it gives on the latest ways to raise cattle.
37. To supply us with information that will help us.

38. Current information is an asset to cattle production.
39. Good Information.
40. Lots of useful information.
41. I like reading it.
42. Good, practical information and is appreciated.
43. As a reminder of practices which should be used to lower cost of production.
44. Beef Cattle Time gives farmers timely and important information to use if needed.
45. Useful information. Some may be repetitive but it is good to be reminded of management practices.
46. Articles are interesting and sometimes informative to my operation.
47. Pertinent and provides latest statistical data.
48. I haven't received this on a full time basis but would like to and probably would help me to be more productive.
49. Can help small farmer with new way to do things.
50. To help me keep up with changes in beef cattle operations.
51. Our direct link to the University of Tennessee.
52. Does some good.
53. Has information relevant to our operation.
54. Information is good to have.
55. Information is very useful on the farm.
56. Very Informative.
57. I enjoy learning new information in cattle breeding and hay production.
58. Valuable source of information for the producers.
59. Informative, useful tool for cattle producer of all kinds.
60. I don't really need it with my experience but I am sure new people do.
61. I enjoy reading the articles plus it is informative and has helped my operation.
62. Articles are very up to date and help keep us on schedule with our work.
63. I enjoy reading and familiarizing myself with the articles listed and I wish a different breed was featured monthly.
64. Source of latest cattle information management practices.
65. Good information.
66. When you take time to read it the articles are helpful.
67. That the American farmers can produce the most clean healthy most productive beef not only for ours but for whole world.
68. Information is helpful.
69. I am reducing my numbers and ready to completely sell out but good information.
70. New information needs to be available at all times.
71. It was helpful when I was raising beef cattle.
72. It is very interesting and helpful to us.
73. It offers up to date information.
74. Helpful Information.
75. Enjoy Articles and new ideas.
76. Like reading other methods.

Why Shouldn't Beef Cattle Time be Continued?

1. Too general, recommendations not balanced with costs
2. Too little kick for $ cost
3. I would use money for more practical research project
4. My operation is too small
5. There are already so much information available from other sources
6. Unpredictability of mail. Put it on a website or send it via email

What are some suggestions for improving "Beef Cattle Time?"

1. Have more on weed control.
2. Maybe, to make UT's dollars be used better, stop mailing and go to Internet and have a few in print in Extension offices.
3. I am happy with the current format.
4. I need to get all the copies.
5. Time of year to sell, weight of calves, where to buy the best breed stock.
6. More articles for smaller operations
7. May not be possible, but more health related articles could be helpful.
8. More information on cow-calf operations.
9. Better informed producers of new intuitions.
10. I think you are doing a good and timely job with articles.
11. I would like to see more issues published each year.
12. More timely, more market information, more future insight at marketing trends.
13. More on repro and genetics and embryo work, also sexed semen (when it is profitable to use and when not.
14. Try not to be so repetitive in spring and fall topics.
15. Add some color print.
16. More articles on forage production, nutrition and marketing.
17. Put it in a format similar to this booklet.
18. More topics for small farmers like myself.
19. Make sure articles presented are unique to Beef Cattle Time issues and not articles already printed in other publications. Improve distribution. Most cattle producers work full time and can't get to Extension office during business hours
20. You can't fix stupid! Stop worrying about hobby producers. Many small producers are NOT hobby producers.
21. Fine as it is!
22. Mail to home.
23. More information about comparisons as effects and cost of creep-feeding.
24. None
25. Keep current and what relates to what we do in our state.
26. More information about working horses, roping, etc, sale information, ranch horses
27. Put on internet.
28. None
29. Keep up the good work at the University of Tennessee
30. I would appreciate more information on genetics, bulls, cows, how to judge cattle structure and appearance, how appearance relates to good buy.
31. Add different breed information and how to maintain and do it with as little or no cash flow, when times are hard.
32. Actual herd health stories and interviews.
33. Keep up the good work you are doing, but always looking for better ways to bring our beef cattle to be some of the best in the world.
34. More info on registering cattle.

35. Information on cattle breeds and performance for commercial sales. Weight, price per pound, calving mortality, and weight gains.

List any other beef production practices or information, which you feel should be included in "Beef Cattle Time."

1. Reproduction and bull buying
2. Crossbreeding
3. Using DDG's in creep-feeding rations & cow supplementation while raising a calf. Also, as a supplement in stockers
4. Hay Management, time of cutting for best profitable yield
5. Q & A forum
6. Political decisions on issues that have been enacted
7. More information about Herefords - we all don't run angus stocker calves or deal with feedlots
8. Sales and Marketing
9. Beef prices, information on how to feed cattle out for slaughter how long, what weight slaughter
10. Information on raising "Natural Beef" "Organic" mgmt practices
11. The latest cost of receiving a calf from birth and weaning weight
12. Artificial Insemination procedures
13. As a seed-stock producer, I would like focus on the commercial cow-calf operator and the importance of cross breeding for hybrid vigor, while not taking a position of one breed. Let men know that other breeds (besides angus) have a place and benefit
14. 1. Forage production in the real world. 2. Marketing - source and age. 3. Genetics that fit one's resources how to ID 4. How to ID open cow (pregnancy test with blood), 5. Breeding problems - you tend to blame all on nutrition and disease - what about genetics?
15. none necessary - all fine! Thanks to your staff for your continuous and current information Jerry L. Cooper
16. Have sold farm no cattle
17. More about parasite control, and disease control through feeds and feeding
18. None
19. Sustainability practices for the producer
20. Give more information about high protein that would be able to be grown in Wayne county
21. New stuff about embryo transfer as it comes out
22. Having meat certified to sell to others without worry
23. An article on how to best take advantage of Johnson grass

Vita

Christina Perez was born on April 23, 1984 in Weslaco, Texas. She was raised by her parents Robert and Otillia Perez Jr. as well as her grandparents, Roberto and Alicia Perez Sr. and Consuelo Castaneda. She has three sisters, Amanda, Vanessa and Robyn.

Christina was an active member in the FFA throughout high school where she showed market steers, sheep and hogs. Christina graduated from Weslaco High School in 2002. She attended Texas A&M University and received her Bachelor of Science Degree in Agricultural Development in 2006.

Following graduation she spent four months working in the wildlife management department at the Great Smoky Mountains National Park in Tennessee. She moved back to Texas to begin work as a management trainee for Sanderson Farms Inc. in Bryan, Texas.

A year later, Christina started her Master's Degree at the University of Tennessee, Knoxville. After completion of her Master's Degree she moved back home to South Texas to pursue a career in agriculture.