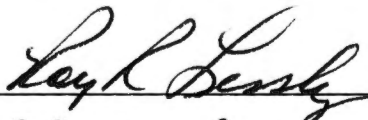
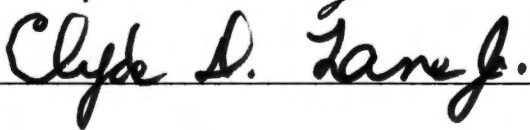


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RELATIONSHIPS BETWEEN CERTAIN TENNESSEE COW-CALF PRODUCER
CHARACTERISTICS AND THEIR USE OF RECOMMENDED
PRACTICES AND THEIR CONTACT
WITH EXTENSION

A Thesis
Presented for the
Master of Science
Degree
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ABSTRACT

The major purpose of this survey study was to determine the relationships between certain selected factors of beef producers and their use of recommended practices. Another purpose was to determine relationships between whether or not Extension was contacted and the use of recommended practices. Data were obtained through personal interviews with 1,813 beef cattle producers located in 85 counties in Tennessee. The 1985 Beef Cow-Calf Producer Survey was used to collect data from the beef producers. Extension agents used the "nth" number technique on their beef mailing list to identify producers to be surveyed. According to the guidelines of the survey, producers interviewed must have had a minimum of 25 cows of breeding age in their herd. The survey provided general information about the producer and his farm as well as information about the recommended beef cattle production practices that producers used.

The data were coded and processed for computer analysis. Computations were made using the University of Tennessee Computing Center facilities. The chi square statistical test was used to determine the strength of relationships between the dependent and independent variables. Chi square values which achieved the .05 probability level were accepted as significant.

Major findings included the following:

1. Use of artificial insemination was significantly related to 5 of the 6 characteristics of beef producers and their farm operations.

Tennessee beef producers who had larger herds (40-over cows), had cattle handling facilities, had row crops as their major source of farm income, were under 50 years of age and had made contacts with Extension agents were more likely than other producers to use artificial insemination.

2. Producers who had larger herds and who had contacts with Extension agents during the past 12-months were more likely than others to use performance tested bulls. Farming status, major source of farm income and producers ages were not significantly related to the use of performance tested bulls.

3. Tennessee beef cattle producers who had larger herds and who were over 50 years of age were more likely than other producers to use cross-bred females. Farming status, major source of farm income or number of contacts producers had with Extension agents were significantly related to use of cross-bred females.

4. Beef cattle producers who had larger herds, had cattle handling facilities, were younger (under 50) and had contacts with Extension agents were more likely than other producers to have their cows and heifers pregnancy checked. Farming status or major source of farm income was not significantly related to pregnancy checking.

5. Producers who had larger herds, sold finished cattle, had cattle handling facilities, had beef cattle as their major source of farm income, were younger (under 50), and those who had contacts with Extension agents were more likely than other producers to have their

calves implanted. Farming status was not significantly related to implanting calves.

6. Producers who had larger herds (over 40 cows), sold finished cattle, had cattle handling facilities, were younger (under 50), and those who had Extension contacts were more likely than other producers to deworm their calves. Neither farming status nor major source of farm income was significantly related to deworming calves.

7. Tennessee beef cattle producers who had larger herds, had cattle handling facilities, were under 50 years of age and those who had contacts with Extension agents were more likely than other producers to vaccinate cows and replacement heifers for leptospirosis. Neither farming status nor major source of farm income was significantly related to vaccinating for leptospirosis.

8. Beef cattle producers who had over 40 cows, had cattle handling facilities, had row-crops as their major source of farm income, were younger (under 50) and had contacts with Extension agents were more likely than other producers to have their herd enrolled in the Tennessee beef cattle improvement program. Farming status was not significantly related to whether or not their herd was enrolled in the beef cattle improvement program.

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CHAPTER I

THE PROBLEM AND ITS SETTING

I. INTRODUCTION

Cow-calf production is the backbone of the beef cattle industry in Tennessee. Cow-calf production will likely continue to be of great importance as producers utilize the 5 million plus acres of pasture land in Tennessee. Cash receipts from cattle and calves in 1985 at \$477.1 million ranked first among all farm commodities in the state and made up 24 percent of total farm cash receipts. Most of the receipts were from the sale of feeder calves. All cattle and calves in Tennessee as of January 1, 1985 totaled 2,535,000 head (17).*

There was a slight reduction in total cattle numbers in 1985 but this was not unexpected after four consecutive years of increases. This decrease does not indicate the lack of importance of beef cattle as a major enterprise but is an indication of low cattle prices and increasing production costs. More importantly, 1985 was the turning point of the beef cattle cycle--the series of events that has for generations affected beef cattle numbers and prices (9).

The cattle cycle reached its low point on January 1, 1979. Drought in 1980 curtailed the expansion somewhat, but expansion did occur. Cattle numbers increased during the mid-eighties even though

*Numbers in parentheses refer to alphabetically numbered references in the Bibliography; those after the colon are page numbers.

profits became unfavorable in late 1983. The cycle appears to be changing once again.

While cattle prices stabilize or gradually rise, as the cycle indicates, the following of recommended production practices will be crucial to the financial portfolio of each producer. The Tennessee Agricultural Extension Service has been the primary source of information concerning recommended cattle production practices for many years. As the information arm of the University of Tennessee, the Extension service has been very instrumental in the development of Tennessee agriculture. Since there is a demand for recommended beef production practices (i.e., economics of producer survival) and Extension is the major provider of information concerning beef production practices, one would expect a relationship.

This study was concerned with the relationship between the beef producers' use of recommended production practices and the producers' contact with Extension. This study was also concerned with the factors involved in increasing the efficiency of the cow-calf producer. With increasing production costs and stable cattle prices, there is a need for increasing production efficiency (14).

Beef cattle producers can increase efficiency by using recommended production practices. One aim of this study was to describe whether or not producers were using the following recommended production practices: using artificial insemination, using performance tested bulls, using cross-bred females, pregnancy checking, using implants, deworming calves, vaccinating and enrolling their herds in the

Tennessee Beef Cattle Improvement Program (TBCIP). Another aim of this study was to describe the relationship between the use of these recommended production practices and certain producer characteristics.

II. NEED FOR THE STUDY

The Agricultural Extension Agent is the main source of information for beef cattle producers in each Tennessee county. The Extension agent diffuses useful and practical information to producers (10). There was a need for agents to know the strength of the relationships between Extension contacts and the use of various beef production practices by producers. There also was a need to examine the characteristics of the beef producers and to determine to what extent the recommended beef production practices were being followed. Using these findings, Extension agents will be able to do a better job of targeting audiences for beef production programs.

III. PURPOSE OF THE STUDY

The purpose of this study was to obtain information that would be useful to Extension agents in planning educational programs for beef cattle producers. Extension agents could use the information to aim their efforts at producers with certain characteristics. The precise purpose of this study, then, was to determine if there was a relationship between certain selected factors of beef producers and their use of recommended practices. The specific objectives were:

1. To determine the relationship between selected factors of beef cattle producers and the use of artificial insemination.
2. To determine the relationship between selected factors of beef cattle producers and the use of performance tested bulls.
3. To determine the relationship between selected factors of beef cattle producers and the use of cross-bred females.
4. To determine the relationship between selected factors of beef cattle producers and the use of pregnancy checking.
5. To determine the relationship between selected factors of beef cattle producers and the use of implants.
6. To determine the relationship between selected factors of beef cattle producers and use of the practice of deworming calves.
7. To determine the relationship between selected factors of beef cattle producers and the use of vaccinations for leptospirosis.
8. To determine the relationship between selected factors of beef cattle producers and their frequency of enrollment in the Tennessee Beef Cattle Improvement Program.

IV. LIMITATIONS OF THE STUDY

This study was limited to data collected from 1,813 beef cattle producers from 85 counties in Tennessee. Producers with 25 or more breeding age cows were randomly selected and interviewed by Extension agents. The number of interviews varied from county to county, depending on the number of beef producers in the county.

V. METHOD OF INVESTIGATION

Population

The population of this study was beef cow-calf producers in 85 counties in Tennessee who had 25 or more breeding age cows (15 months of age or older) in their herd during the year prior to the survey.

Selection of Sample

Extension agents used their county list of beef producers to obtain the sample. The "nth" number technique was used to identify producers to be surveyed. If there was a sufficient reason for a producer not to be surveyed, then a replacement producer was selected.

Development of Survey Instrument

The 1985 Tennessee Beef Cow-Calf Producer Survey was developed by the University of Tennessee Agriculture Extension Specialist staff in Animal Science and the Extension Education department.

Conducting the Survey

The survey was conducted by Extension agents in 85 Tennessee counties through personal interview. The Extension agents scheduled interviews with producers and completed the survey on the farm or at the county Extension office.

Method of Analysis

The data were coded and processed for computer analysis. Computations were made using the University of Tennessee Computing

Center facilities. Chi square statistic was used to determine strength of the relationship between dependent and independent variables. The independent variables were herd size, finished cattle sold, availability of cattle handling facilities, farming status, major source of farm income, producers' age and Extension contact. The dependent variables were whether or not Tennessee beef producers were implementing the following recommended production practices: using artificial insemination, using performance tested bulls, using cross-bred females, pregnancy checking, using implants, deworming calves, vaccinating, enrolled in the Tennessee Beef Cattle Improvement Program (TBCIP). Chi square values which achieved the .05 probability level were accepted as indicating a significant relationship between the variables.

VI. DEFINITION OF TERMS

1. Beef Cattle Producer. In this study this term refers to a beef producer who maintains a herd of brood cows for the purpose of producing calves to sell as feeders or yearlings. Also referred to as cow-calf producers.

2. Extension Contact. One of the various methods, such as a farm visit, by which Extension agents supply information to producers on subject matter of importance to the producer.

3. Tennessee Beef Cattle Improvement Program (TBCIP). A program for performance testing beef cattle that is available to beef producers by the Tennessee Agricultural Extension Service. Performance testing

is a systematic way of recording differences in certain economical traits among animals.

4. Recommended Practice. A research verified and commonly accepted procedure which, if performed correctly and on a timely basis, will increase a desired outcome or return.

5. Implants. A growth hormone placed into calves to stimulate the development process. Reduces the number of days to market as weight gain and feed efficiency increase after implanting.

6. Performance Tested Bull. A bull whose performance has been measured by his growth rate from birth to one year of age. The test results reveal desirable traits that can be used to upgrade a commercial or registered herd.

CHAPTER II

REVIEW OF RELATED STUDIES

Beef cattle production is a very broad topic. Many volumes have been written pertaining to this subject. Information available comparing cow-calf producer and farm characteristics with recommended practices used, however, is quite limited. The findings of studies that have been made related to the characteristics of beef producers and the producers' adoption of recommended practices are presented in this chapter. There have been several studies of Extension contacts and its relationship to various areas of agriculture other than beef production. The findings of these studies will also be presented in this review.

The available studies and findings are reported under the following headings: (1) Tennessee Beef Cattle Producer and Farm Characteristics; (2) Producer Use of Recommended Beef Cattle Production Practices; and (3) Agricultural Producer Use of Recommended Production Practices and Extension Contacts.

I. TENNESSEE BEEF CATTLE PRODUCER AND FARM CHARACTERISTICS

Matthews (11) reported in a 1968 study of Lawrence County, Tennessee beef cattle producers that the average age of the producer was 55 years, 27 percent were full-time farmers, the average farm size was 179 acres and the average number of cows was 19.

Luck (8) in a similar 1968 study found that Macon County, Tennessee beef producers had an average age of 51 years, 65 percent were full-time farmers, 19 percent listed beef as their major source of farm income, the average farm consisted of 187 acres and the average number of beef cows was 20.

In 1972, Brewer (4) surveyed beef producers in Marshall County, Tennessee. He found that the average age of the producer was 55 years, 58 percent were full-time farmers, 48 percent gave beef as their major source of farm income, the average farm size was 140 acres and the average number of cows was 35.

Taylor (16) in a study conducted in 1972 in Knox County, Tennessee found that 54 percent of the producers were over 55 years of age, 52 percent were part-time farmers, 11 percent listed beef as their major source of farm income and the average farm contained 214 acres with 40 cows.

Similar studies were done by Lovely (7) in 1975, Mohamad (13) in 1979, Rutter (15) in 1982 and Lumpkin (9) in 1985. All of these studies concur in the findings that approximately 52 percent of the producers were 51 years old or older, approximately 54 percent were full-time farmers, the average number of acres was approximately 100 and the average number of breeding age cows was 35.

Beeler (3) reaffirmed the earlier findings in a 1986 study. He found that 51 percent of the producers were full-time farmers and 53 percent had herd sizes in the 25 to 49 range.

II. PRODUCER USE OF RECOMMENDED BEEF CATTLE PRODUCTION PRACTICES

Lovely (7:63) found that beef cattle producers were utilizing recommended practices only to about 25 to 50 percent of their effective use. No producers were enrolled in the Tennessee Beef Cattle Improvement Program and only 5 producers were using a performance tested bull in 1979 (7:68).

High producers were using more recommended practices than low producers according to Brewer (4:76). Brewer, Taylor and Matthews used similar systems to rate producers on a scale from 0 to 5. Being unaware of a recommended practice received a score of 0 with a score of 5 meaning that the producer used the practice. Brewer (4:51) rated all beef producers at 3.73, Taylor (16:55) rated them at 3.69 and Matthews (11:58) found the average rating to be 2.75.

Mohamad found that production practices which were weak or needed improvement were using performance tested bulls, enrolling the herd in TBCIP, pregnancy checking cows, using growth stimulants and vaccinating for leptospirosis and other diseases. Furthermore, small producers needed improvement in the adequacy of cattle working facilities (13:81).

Rutter (15:80-82) found that only 6 percent of the producers had their herds enrolled in TBCIP, only 10 percent of the producers were pregnancy checking cows, 65 percent had adequate working facilities, 28 percent were using performance tested bulls and 13 percent were using growth stimulants. The average use of all practices in his study was 60 percent.

Lumpkin (9:146) reported that only 3 recommended practices were used by 75 percent or more of the producers. These findings included 29 percent that were using performance tested bulls, 6 percent that had their herds enrolled in TBCIP, 65 percent with adequate working facilities, 11 percent that were pregnancy checking and 13 percent that were using growth stimulants.

Beeler (3) found that Tennessee beef producers were not using a very high percentage of the recommended practices. He reported that producers did not understand the benefits of using performance tested bulls, implanting calves, pregnancy checking cows or enrolling in a herd improvement program. Beeler found that less than one third of the producers were using these practices.

III. AGRICULTURAL PRODUCER USE OF RECOMMENDED PRODUCTION PRACTICES AND EXTENSION CONTACTS

McLemore (12), in a Tennessee swine producer study found that producers were using 23 of the 25 recommended practices studied. He also reported that the total number of pigs raised to weaning was significantly related to the total number of Extension contacts.

Gordon (5:80) in a 1977 study of Haywood County, Tennessee feeder pig producers found that the number of contacts that producers had with Extension was significantly related to their use of 5 of the 21 recommended swine production practices studied. Producers who were using the recommended practices had made a significantly larger number of contacts with Extension than did producers who were not using the practices.

Arnett (1) conducted a 1973 study in which he found that the number of office visits was significantly related to the educational level of the 203 Wilson County, Tennessee farmers who visited the county Extension office. He found that the number of office visits was not significantly related to the race of the individual. Arnett also found that producers who attended a larger number of Extension meetings tended to have made more visits and telephone calls to the Extension office than those not attending Extension meetings.

Rutter (15:83-85) reported that there was a significant relationship in the total number of contacts that beef producers had with Extension and 13 of the 25 production practices studied. He found that full-time farmers averaged slightly more total contacts with Extension than part-time farmers.

Headrick (6:134) reported in a 1983 study that 52 percent of the beef producers surveyed reported attending 1 or more Extension meetings during the last 12 months. The average number of meetings attended by all producers was 6.6. The average number of telephone calls to the Extension office was 3.6. He reported that 20 percent of the producers received no visits from Extension agents during the previous 12 months and the average number of visits was 4.6.

Ary (2:95) in a 1986 study of Tennessee dark fired tobacco producers found that the use of 9 of 29 production practices were significantly related to the number of contacts producers had with Extension agents.

It is hoped that this review of previous studies provides some understanding of the need for this study. The influence of certain

independent variables on the use of recommended beef cattle production practices was emphasized in this investigation.

CHAPTER III

STUDY FINDINGS

The findings of this study were organized into eight sections according to the specific objectives of the study. The findings constituting each of eight tables are presented in the eight sections.

Section I presents findings regarding the relationship between selected factors of beef cattle producers and the use of artificial insemination.

Section II presents findings regarding the relationship between selected factors of beef cattle producers and the use of performance tested bulls.

Section III presents findings regarding the relationship between selected factors of beef cattle producers and the use of cross-bred females.

Section IV presents findings regarding the relationship between selected factors of beef cattle producers and the use of pregnancy checking.

Section V presents findings regarding the relationship between selected factors of beef cattle producers and the use of implants.

Section VI presents findings regarding the relationship between selected factors of beef cattle producers and the practice of deworming calves.

Section VII presents findings regarding the relationship between selected factors of beef cattle producers and the use of vaccinations for leptospirosis.

Section VIII presents findings regarding the relationship between selected factors of beef cattle producers and their frequency of enrollment in the Tennessee Beef Cattle Improvement program (TBCIP).

I. SELECTED FACTORS IN RELATIONSHIP TO WHETHER OR NOT BEEF
PRODUCERS WERE USING ARTIFICIAL INSEMINATION

Findings regarding relationships between six selected factors of beef cattle producers and whether or not the producers were using artificial insemination within their herds are presented in this section (see Table I). Relationships between the independent variables (i.e., herd size, availability of cattle handling facilities, farming status, major source of farm income, producers' age and Extension contacts) and the dependent variable (i.e., whether or not producers were using artificial insemination) were tested using the chi square test. The .05 probability level was accepted as significant.

Herd Size and Use of Artificial Insemination

Eight hundred ninety one (49.3 percent) of the 1,807 beef producers responding had a herd size of 40 head or less. Nine hundred sixteen (50.7 percent) of the producers had a herd size of 41 or more head. Of all producers responding 12 percent were using artificial insemination. Approximately 10 percent of the producers with a herd size of 40 or less were using artificial insemination compared to approximately 14 percent of the producers with a herd size of 41 or more. The chi square test indicated a significant relationship between herd size and the use of artificial insemination. Larger producers were more likely than smaller producers to use artificial insemination.

Availability of Cattle Handling Facilities and
Artificial Insemination

One hundred fifty nine (8.8 percent) of the respondents had no cattle handling facilities. One thousand six hundred fifty four (91.2 percent) of the respondents had some type of cattle handling facilities. Approximately 3 percent of the producers with no available cattle handling facilities were using artificial insemination compared to approximately 13 percent of the producers that had cattle handling facilities available. The chi square test indicated a significant relationship between the availability of cattle handling facilities and the use of artificial insemination. Producers with cattle handling facilities were more likely to use artificial insemination than those producers with no facilities.

Farming Status and Use of Artificial Insemination

One thousand thirty (57.9 percent) of the producers responding were full-time farmers. Seven hundred fifty (42.1 percent) of the respondents were part-time farmers. Approximately 12 percent of the full-time farmers were using artificial insemination compared to approximately 12 percent of the part-time farmers. The chi square test indicated no significant relationship between farming status and the use of artificial insemination. Full-time farmers were no more likely to use artificial insemination than part-time farmers.

Major Source of Farm Income and Use of
Artificial Insemination

Nine hundred seventeen (51.7 percent) of the respondents raised beef cattle as their major source of farm income. Eight hundred fifty eight (48.3 percent) of the respondents raised row crops as their major source of farm income. Approximately 9 percent of the respondents that had beef cattle as their major source of farm income were using artificial insemination compared to approximately 15 percent of the respondents that had row crops as their major source of farm income. The chi square test indicated a significant relationship between the major source of farm income and the use of artificial insemination. Producers that raised row crops as their major source of farm income were more likely to use artificial insemination than producers that raised beef cattle as their major source of farm income.

Producers' Age and Use of Artificial Insemination

Seven hundred fifty four (41.6 percent) of the respondents were under age 50. One thousand fifty nine (58.4 percent) of the respondents were age 50 or more. Approximately 15 percent of the producers under age 50 were using artificial insemination compared to 9 percent of the producers age 50 or over. The chi square test indicated a significant relationship between the producers' age and the use of artificial insemination. Producers under the age of 50 were more likely to use artificial insemination than producers age 50 or over.

Extension Contacted and Use of Artificial Insemination

Two hundred eleven (11.7 percent) of the respondents did not contact Extension. One thousand six hundred (88.3 percent) of the respondents did contact Extension. Approximately 4 percent of the respondents that did not contact Extension were using artificial insemination compared to approximately 13 percent of the respondents that did contact Extension. The chi square test indicated a significant relationship between whether or not Extension was contacted and the use of artificial insemination. Producers that contacted Extension were more likely to use artificial insemination than those that did not contact Extension.

Table Summary and Discussion

In summary of data in Table I, major findings indicate:

1. That large producers under the age of 50, those that contacted Extension, and those that had cattle handling facilities were more likely than older producers to be using artificial insemination.
2. There was no more likelihood for a full-time farmer to use artificial insemination than for a part-time farmer.
3. That producers who had row crops as their major source of farm income were more likely to be using artificial insemination than producers that had beef cattle as their major source of farm income.

II. SELECTED FACTORS IN RELATIONSHIP TO WHETHER OR NOT BEEF PRODUCERS WERE USING PERFORMANCE TESTED BULLS

Findings regarding relationships between five selected factors of beef cattle producers and whether or not the producers were using performance tested bulls within their herds are presented in this section (see Table II). The chi square test was used to determine the relationships between the independent variables (i.e., herd size, farming status, major source of farm income, producers' age and Extension contacts) and the dependent variable (i.e., whether or not producers were using performance tested bulls).

Herd Size and Use of Performance Tested Bulls

Eight hundred eighty nine (49.3 percent) of the respondents had a herd size of 40 head or less. Nine hundred thirteen (50.7 percent) of the producers had a herd size of 41 or more head. Of all producers responding 27 percent were using performance tested bulls. Approximately 21 percent of the producers with a herd size of 40 or less were using performance tested bulls compared to approximately 34 percent of the producers with a herd size of 41 or more. The chi square test indicated a significant relationship between herd size and the use of performance tested bulls. Larger producers were more likely than smaller producers to use performance tested bulls.

Farming Status and Use of Performance Tested Bulls

One thousand twenty six (57.9 percent) of the respondents were full-time farmers. Seven hundred forty seven (42.1 percent) of the

TABLE II. Selected Factors in Relationship to Whether or not Beef Producers were using Performance Tested Bulls

Selected Factors	Used Performance Tested Bulls					
	No		Yes		Total	
	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents
Herd Size						
40-less	706	79.4	183	20.6	889	49.3
41-over	602	65.9	311	34.1	913	50.7
Statistic $\chi^2 = 40.45$; $p = 0.00$						
Farming Status						
Full-time	735	71.6	291	28.4	1,026	57.9
Part-time	563	75.4	184	24.6	747	42.1
Statistic $\chi^2 = 2.88$; $p = 0.09$						
Major Source Farm Income						
Beef cattle	666	72.8	249	27.2	915	51.8
Row crop	629	73.7	224	26.3	853	48.2
Statistic $\chi^2 = 0.16$; $p = 0.69$						
Producers' Age						
Under 50	544	72.5	206	27.5	750	41.6
50-over	765	72.5	290	27.5	1,055	58.4
Statistic $\chi^2 = 0.00$; $p = 1.00$						
Extension Contacted						
No	167	79.5	43	20.5	210	11.6
Yes	1,140	71.6	453	28.4	1,593	88.4
Statistic $\chi^2 = 5.50$; $p = 0.02$						

respondents were part-time farmers. Approximately 28 percent of the full-time farmers were using performance tested bulls compared to approximately 25 percent of the part-time farmers. The chi square test indicated no significant relationship between farming status and the use of performance tested bulls. Full-time farmers were no more likely to use performance tested bulls than part-time farmers.

Major Source of Farm Income and Use of Performance Tested Bulls

Nine hundred fifteen (51.8 percent) of the respondents raised beef cattle as their major source of farm income. Eight hundred fifty three (48.2 percent) of the respondents raised row crops as their major source of farm income. Approximately 27 percent of the respondents that had beef cattle as their major source of farm income were using performance tested bulls compared to approximately 26 percent of the respondents that had row crops as their major source of farm income. The chi square test indicated no significant relationship between the major source of farm income and the use of performance tested bulls. Producers that raised beef cattle as their major source of farm income were no more likely to use performance tested bulls than producers that raised row crops as their major source of farm income.

Producers' Age and Use of Performance Tested Bulls

Seven hundred fifty (41.6 percent) of the respondents were under age 50. One thousand fifty five (58.4 percent) of the respondents

were age 50 or over. Approximately 27.5 percent of the producers under age 50 were using performance tested bulls compared to 27.5 percent of the producers age 50 or over. The chi square test indicated no significant relationship between the producers' age and the use of performance tested bulls. Producers under the age of 50 were no more likely to use performance tested bulls than producers age 50 or over.

Extension Contacted and Use of Performance

Tested Bulls

Two hundred ten (11.6 percent) of the respondents did not contact Extension. One thousand five hundred ninety three (88.4 percent) of the respondents did contact Extension. Approximately 21 percent of the respondents that did not contact Extension were using performance tested bulls compared to approximately 28 percent of the respondents that did contact Extension. The chi square test indicated a significant relationship between whether or not Extension was contacted and use of performance tested bulls. Producers that contacted Extension were more likely to use performance tested bulls than producers that did not contact Extension.

Table Summary and Discussion

In summary of data in Table II, major findings indicate the following:

1. The producers' herd size and contact with Extension were significantly related to whether or not performance tested bulls

were used. Producers with larger herds and those who had contact with Extension were more likely than those who did not to use performance tested bulls.

2. Producers' age, farming status and major source of farm income were not significantly related to whether or not performance tested bulls were used.

3. Producers that had beef cattle as their major source of farm income were no more likely to have used performance tested bulls than producers that had row crops as their major source of farm income.

III. SELECTED FACTORS IN RELATIONSHIP TO WHETHER OR NOT BEEF PRODUCERS WERE USING CROSS-BRED FEMALES

Findings regarding relationships between five selected factors of beef cattle producers and whether or not the producers were using cross-bred females within their herds are presented in this section (see Table III). Relationships between the five selected factors (i.e., herd size, farming status, major source of farm income, producers' age and Extension contacts) and the dependent variable (i.e., whether or not producers used cross-bred females) were tested using the chi square test. The .05 probability level was accepted as significant.

Herd Size and Use of Cross-Bred Females

Eight hundred ninety (49.3 percent) of the respondents had a herd size of 40 head or less. Nine hundred sixteen (50.7 percent) of the producers had a herd size of 41 or more head. Of all producers

TABLE III. Selected Factors in Relationship to Whether or not Beef Producers were using Cross-Bred Females

Selected Factors	Used Cross-Bred Females					
	No		Yes		Total	
	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents
Herd Size						
40-less	551	61.9	339	38.1	890	49.3
41-over	633	69.1	283	30.9	916	50.7
Statistic $\chi^2 = 10.03$; $p = 0.00$						
Farming Status						
Full-time	669	65.1	359	34.9	1,028	57.8
Part-time	495	66.0	255	34.0	750	42.2
Statistic $\chi^2 = 0.124$; $p = 0.72$						
Major Source Farm Income						
Beef cattle	610	66.6	306	33.4	916	51.7
Row crop	550	64.2	307	35.8	857	48.3
Statistic $\chi^2 = 1.04$; $p = 0.31$						
Producers' Age						
Under 50	531	70.5	222	29.5	753	41.6
50-over	654	61.9	403	38.1	1,057	58.4
Statistic $\chi^2 = 14.16$; $p = 0.00$						
Extension Contacted						
No	138	65.7	72	34.3	210	11.6
Yes	1,045	65.4	553	34.6	1,598	88.4
Statistic $\chi^2 = 0.00$; $p = 0.98$						

responding 34 percent were using cross-bred females. Approximately 38 percent of the producers with a herd size of 40 or less used cross-bred females compared to approximately 31 percent of the producers with a herd size of 41 or more. The chi square test indicated a significant relationship between herd size and the use of cross-bred females. Smaller producers were more likely than larger producers to use cross-bred females.

Farming Status and Use of Cross-Bred Females

One thousand twenty eight (57.8 percent) of the producers responding were full-time farmers. Seven hundred fifty (42.2 percent) of the respondents were part-time farmers. Approximately 35 percent of the full-time farmers used cross-bred females compared to approximately 34 percent of the part-time farmers. The chi square test indicated no significant relationship between farming status and the use of cross-bred females. Full-time farmers were no more likely to use cross-bred females than part-time farmers.

Major Source of Farm Income and Use of Cross-Bred Females

Nine hundred sixteen (51.7 percent) of the respondents raised beef cattle as their major source of farm income. Eight hundred fifty seven (48.3 percent) of the respondents raised row crops as their major source of farm income. Approximately 33 percent of the producers that had beef cattle as their major source of farm income used cross-bred females compared to approximately 36 percent of the respondents

that had row crops as their major source of farm income. The chi square test indicated no significant relationship between the major source of farm income and the use of cross-bred females. Producers that raised beef cattle as their major source of farm income were no more likely to use cross-bred females than producers that raised row crops as their major source of farm income.

Producers' Age and Use of Cross-Bred Females

Seven hundred fifty three (41.6 percent) of the respondents were under age 50. One thousand fifty seven (58.4 percent) of the respondents were age 50 or over. Approximately 30 percent of the producers under age 50 used cross-bred females compared to 38 percent of the producers age 50 or over. The chi square test indicated a significant relationship between the producers' age and the use of cross-bred females. Producers 50 and over were more likely to use cross-bred females than producers under 50.

Extension Contacted and Use of Cross-Bred Females

Two hundred ten (11.6 percent) of the respondents did not contact Extension. One thousand five hundred ninety eight (88.4 percent) of the respondents did contact Extension. Approximately 34 percent of the respondents that did not contact Extension used cross-bred females compared to approximately 35 percent of the respondents that did contact Extension. The chi square test indicated no significant relationship between whether or not Extension was contacted and the use of cross-bred females. Producers that contacted

Extension were no more likely to use cross-bred females than those that did not contact Extension.

Table Summary and Discussion

In summary of data in Table III, major findings indicate:

1. That producers' herd size and age were significantly related to whether or not cross-bred females were used. Smaller producers and those who were older were more likely than other producers to use cross-bred females.
2. Farming status and whether or not Extension was contacted were not significantly related to whether or not cross-bred females were used.
3. Producers that had beef cattle as their major source of farm income were no more likely to have used cross-bred females than producers that had row crops as their major source of farm income.

IV. SELECTED FACTORS IN RELATIONSHIP TO WHETHER OR NOT BEEF PRODUCERS WERE PREGNANCY CHECKING

Findings regarding relationships between six selected factors of beef cattle producers and whether or not the producers were pregnancy checking within their herds are presented in this section (see Table IV). Relationships between the selected factors (i.e., herd size, availability of cattle handling facilities, farming status, major source of farm income, producers' age and Extension contacts) and the dependent variable (i.e., whether or not producers were pregnancy checking) were tested using the chi square test. The .05 probability level was accepted as significant.

TABLE IV. Selected Factors in Relationship to Whether or not Beef Producers were Pregnancy Checking

Selected Factors	Cows-Heifers Pregnancy Checked					
	No		Yes		Total	
	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents
Herd Size						
40-less	741	83.4	148	16.6	889	49.3
41-over	672	73.4	244	26.6	916	50.7
Statistic $\chi^2 = 25.9$; $p = 0.00$						
Had Cattle Handling Facilities						
No	152	96.2	6	3.8	158	8.7
Yes	1,262	76.3	391	23.7	1,653	91.3
Statistic $\chi^2 = 32.07$; $p = 0.00$						
Farming Status						
Full-time	796	77.4	233	22.6	1,029	57.8
Part-time	589	78.5	161	21.5	750	42.2
Statistic $\chi^2 = .28$; $p = 0.59$						
Major Source Farm Income						
Beef cattle	724	79.0	193	21.0	917	51.7
Row crop	658	76.8	199	23.2	857	48.3
Statistic $\chi^2 = 1.09$; $p = 0.30$						
Producers' Age						
Under 50	553	73.4	200	26.6	753	41.6
50-over	861	81.4	197	18.6	1,058	58.4
Statistic $\chi^2 = 15.74$; $p = 0.00$						
Extension Contacted						
No	193	91.9	17	8.1	210	11.6
Yes	1,219	76.2	380	23.8	1,599	88.4
Statistic $\chi^2 = 25.7$; $p = 0.00$						

Herd Size and Pregnancy Checking

Eight hundred eighty nine (49.3 percent) of the respondents had a herd size of 40 head or less. Nine hundred sixteen (50.7 percent) of the producers had a herd size of 41 or more head. Of all producers responding approximately 20 percent were pregnancy checking. Approximately 17 percent of the producers with a herd size of 40 or less were pregnancy checking compared to approximately 27 percent of the producers with a herd size of 40 or more. The chi square test indicated a significant relationship between herd size and pregnancy checking. Larger producers were more likely than smaller producers to be pregnancy checking.

Availability of Cattle Handling Facilities and Pregnancy Checking

One hundred fifty eight (8.7 percent) of the respondents had no cattle handling facilities. One thousand six hundred fifty three (91.3 percent) of the respondents had some type of cattle handling facilities. Approximately 4 percent of the producers with no available cattle handling facilities were pregnancy checking compared to approximately 24 percent of the producers that had cattle handling facilities. The chi square test indicated a significant relationship between the availability of cattle handling facilities and pregnancy checking. Producers with cattle handling facilities were no more likely to have been pregnancy checking than those with no facilities.

Farming Status and Pregnancy Checking

One thousand twenty nine (57.8 percent) of the producers responding were full-time farmers. Seven hundred fifty (42.2 percent) of the respondents were part-time farmers. Approximately 23 percent of full-time farmers were pregnancy checking compared to approximately 22 percent of the part-time farmers. The chi square test indicated no significant relationship between farming status and pregnancy checking. Full-time farmers were no more likely to have been pregnancy checking than part-time farmers.

Major Source of Farm Income and Pregnancy Checking

Nine hundred seventeen (51.7 percent) of the respondents raised beef cattle as their major source of farm income. Eight hundred fifty seven (48.3 percent) of the respondents raised row crops as their major source of farm income. Approximately 21 percent of the respondents that had beef cattle as their major source of income were pregnancy checking compared to approximately 23 percent of the respondents that had row crops as their major source of farm income. The chi square test indicated no significant relationship between the major source of farm income and pregnancy checking. Producers that raised beef cattle as their major source of farm income were no more likely to have been pregnancy checking than producers that raised row crops as their major source of farm income.

Producers' Age and Pregnancy Checking

Seven hundred fifty three (41.6 percent) of the respondents were under age 50. One thousand fifty eight (58.4 percent) of the respondents were age 50 or over. Approximately 27 percent of the producers under age 50 were pregnancy testing compared to approximately 19 percent of the producers age 50 or over. The chi square test indicated a significant relationship between the producers' age and pregnancy testing. Producers under the age of 50 were more likely to be pregnancy checking than producers age 50 or over.

Extension Contacted and Pregnancy Checking

Two hundred ten (11.6 percent) of the respondents did not contact Extension. One thousand five hundred ninety nine (88.4 percent) of the respondents did contact Extension. Approximately 8 percent of the respondents that did not contact Extension were pregnancy checking compared to approximately 24 percent of the respondents that did contact Extension. The chi square test indicated a significant relationship between whether or not Extension was contacted and pregnancy checking. Producers that contacted Extension were more likely to have been pregnancy checking than producers that did not contact Extension.

Table Summary and Discussion

In summary of data in Table IV, major findings indicate:

1. That producers' herd size, availability of cattle handling facilities, age and contact with Extension were significantly related to whether or not they were pregnancy checking. Tennessee beef cattle

producers who were larger, those who had cattle handling facilities, those who were younger and those who had contact with Extension during the past 12 months were more likely than other producers to be pregnancy checking their cows.

2. Farming status and major source of farm income were not significantly related to pregnancy checking.

V. SELECTED FACTORS IN RELATIONSHIP TO WHETHER OR NOT BEEF PRODUCERS WERE USING IMPLANTS

Findings regarding relationships between seven selected factors of beef cattle producers and whether or not the producers were using implants within their herds are presented in this section (see Table V). Relationships between the independent variables (i.e., herd size, finished cattle sold, availability of cattle handling facilities, farming status, major source of farm income, producers' age and Extension contacts) and the dependent variable (i.e., whether or not producers were using implants) were tested using the chi square test. The .05 probability level was accepted as significant.

Herd Size and Use of Implants

Eight hundred ninety one (49.3 percent) of the respondents had a herd size of 40 head or less. Nine hundred sixteen (50.7 percent) of the producers had a herd size of 41 or more head. Of all producers responding 53 percent were using implants. Approximately 44 percent of the producers with a herd size of 40 or less used implants compared to approximately 62 percent of the producers with a herd size

TABLE V. Selected Factors in Relationship to Whether or not Beef Producers were using Implants

Selected Factors	Calves Implanted					
	No		Yes		Total	
	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents
Herd Size						
40-less	497	55.8	394	44.2	891	49.3
41-over	344	37.6	572	62.4	916	50.7
Statistic χ^2	= 59.57; p = 0.00					
Finished Cattle Sold						
Not any	765	48.5	822	51.8	1,587	87.5
One or more	80	35.4	146	64.6	226	12.5
Statistic χ^2	= 12.53; p = 0.00					
Had Cattle Handling Facilities						
No	122	76.7	37	23.3	159	8.8
Yes	723	43.7	931	56.3	1,654	91.2
Statistic χ^2	= 62.22; p = 0.00					
Farming Status						
Full-time	469	45.5	561	54.5	1,030	57.9
Part-time	360	48.0	390	52.0	750	42.1
Statistic χ^2	= 0.96; p = 0.33					
Major Source Farm Income						
Beef cattle	381	41.5	536	58.5	917	51.7
Row crop	446	52.0	412	48.0	858	48.3
Statistic χ^2	= 18.97; p = 0.00					
Producers' Age						
Under 50	306	40.6	448	59.4	754	41.6
50-over	539	50.9	520	49.1	1,059	58.4
Statistic χ^2	= 18.41; p = 0.00					
Extension Contacted						
No	155	73.5	56	26.5	211	11.7
Yes	689	43.1	911	56.9	1,600	88.3
Statistic χ^2	= 68.00; p = 0.00					

of 40 or more. The chi square test indicated a significant relationship between herd size and the use of implants. Larger producers were more likely than smaller producers to use implants.

Finished Cattle Sold and Use of Implants

One thousand five hundred eighty seven (87.5 percent) of the respondents did not sell any finished cattle. Two hundred twenty six (12.5 percent) of the respondents sold one or more head of finished cattle. Fifty two percent of the producers that did not sell any finished cattle used implants compared to 65 percent of the producers that sold one or more head of finished cattle. The chi square test indicated a significant relationship between the selling of finished cattle and the use of implants. Producers that sold one or more head of finished cattle were more likely to use implants than producers that sold no finished cattle.

Availability of Cattle Handling Facilities and Use of Implants

One hundred fifty nine (8.8 percent) of the respondents had no cattle handling facilities. One thousand six hundred fifty four of the respondents had some type of cattle handling facilities. Approximately 23 percent of the producers with no available cattle handling facilities used implants compared to approximately 56 percent of the producers that had cattle handling facilities available. The chi-square test indicated a significant relationship between the availability of cattle handling facilities and use of implants.

Producers with cattle handling facilities were more likely to use implants than those with no facilities.

Farming Status and Use of Implants

One thousand thirty (57.9 percent) of the producers responding were full-time farmers. Seven hundred fifty (42.1 percent) of the respondents were part-time farmers. Approximately 55 percent of the full-time farmers used implants compared to approximately 52 percent of the part-time farmers. The chi square test indicated no significant relationship between farming status and the use of implants. Full-time farmers were no more likely to use implants than part-time farmers.

Major Source of Farm Income and Use of Implants

Nine hundred seventeen (51.7 percent) of the respondents raised beef cattle as their major source of farm income. Eight hundred fifty eight (48.3 percent) of the respondents raised row crops as their major source of farm income. Fifty nine percent of the respondents that had beef cattle as their major source of farm income used implants compared to 48 percent of the respondents that had row crops as their major source of farm income. The chi square test indicated a significant relationship between the major source of farm income and the use of implants. Producers that raised beef cattle as their major source of farm income were more likely to use implants than producers that raised row crops as their major source of farm income.

Producers' Age and Use of Implants

Seven hundred fifty four (41.6 percent) of the respondents were under age 50. One thousand fifty nine (58.4 percent) of the respondents were age 50 or over. Approximately 59 percent of the producers under age 50 used implants compared to 49 percent of the producers age 50 or over. The chi square test indicated a significant relationship between the producers' age and the use of implants. Producers under the age of 50 were more likely to use implants than producers age 50 or over.

Extension Contacted and Use of Implants

Two hundred eleven (11.7 percent) of the respondents did not contact Extension. One thousand six hundred (88.3 percent) of the respondents did contact Extension. Approximately 27 percent of the respondents that did not contact Extension used implants compared to 57 percent of the respondents that did contact Extension. The chi square test indicated a significant relationship between whether or not Extension was contacted and the use of implants. Producers that contacted Extension were more likely to use implants than those that did not contact Extension.

Table Summary and Discussion

In summary of data in Table V, major findings indicate:

1. Producers' herd size, finished cattle sold, availability of cattle handling facilities, major source of farm income, age and contact with Extension were significantly related to whether or not they used

implants. Producers with larger herds, those who sold some finished cattle, those who had cattle handling facilities, those whose major source of farm income was from beef cattle, those who were younger and those who had contacted Extension agents during the past 12 months were more likely than other producers to use implants.

2. Farming status was not significantly related to whether or not producers used implants.

VI. SELECTED FACTORS IN RELATIONSHIP TO WHETHER OR NOT BEEF PRODUCERS WERE DEWORMING CALVES

Findings regarding relationships between seven selected factors of beef cattle producers and whether or not the producers were deworming calves within their herds are presented in this section (see Table VI). Relationships between the independent variables (i.e., herd size, finished cattle sold, availability of cattle handling facilities, farming status, major source of farm income, producers' age and Extension contacts) and the dependent variable (i.e., whether or not producers were deworming calves) were tested using the chi square test. The .05 probability level was accepted as significant.

Herd Size and Deworming Calves

Eight hundred eighty two (49.1 percent) of the respondents had a herd size of 40 head or less. Nine hundred fourteen (50.9 percent) of the producers had a herd size of 41 or more head. Of all producers responding 71 percent were deworming calves. Approximately 66 percent of the producers with a herd size of 40 or less were deworming calves

TABLE VI. Selected Factors in Relationship to Whether or not Beef Producers were Deworming Calves

Selected Factors	Calves Dewormed					
	No		Yes		Total	
	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents
Herd Size						
40-less	297	33.7	585	66.3	882	49.1
41-over	219	24.0	695	76.0	914	50.9
Statistic $\chi^2 = 20.21$; $p = 0.00$						
Finished Cattle Sold						
Not any	477	30.3	1,098	69.7	1,575	87.5
One or more	39	17.3	187	82.7	226	12.5
Statistic $\chi^2 = 15.78$; $p = 0.00$						
Had Cattle Handling Facilities						
No	87	55.4	70	44.6	157	8.7
Yes	429	26.1	1,215	73.9	1,644	91.3
Statistic $\chi^2 = 58.84$; $p = 0.00$						
Farming Status						
Full-time	294	28.6	733	71.4	1,027	58.1
Part-time	209	28.2	533	71.8	742	41.9
Statistic $\chi^2 = 0.03$; $p = 0.87$						
Major Source Farm Income						
Beef cattle	254	27.8	660	72.2	914	51.8
Row crop	249	29.3	601	70.7	850	48.2
Statistic $\chi^2 = 0.42$; $p = 0.52$						
Producers' Age						
Under 50	183	24.4	567	75.6	750	41.6
50-over	333	31.7	718	68.3	1,051	58.4
Statistic $\chi^2 = 11.00$; $p = 0.00$						
Extension Contacted						
No	91	43.3	119	56.7	210	11.7
Yes	425	26.7	1,164	73.3	1,589	88.3
Statistic $\chi^2 = 24.14$; $p = 0.00$						

compared to 76 percent of the producers with a herd size of 40 or more. The chi square test indicated a significant relationship between herd size and deworming calves. Larger producers were more likely than smaller producers to be deworming calves.

Finished Cattle Sold and Deworming Calves

One thousand five hundred seventy five (87.5 percent) of the respondents did not sell any finished cattle. Two hundred twenty six (12.5 percent) of the respondents sold one or more head of finished cattle. Approximately 70 percent of the producers that sold no finished cattle were deworming calves compared to approximately 83 percent of the producers that sold one or more head of finished cattle. The chi square test indicated a significant relationship between the selling of finished cattle and deworming calves. Producers that sold some finished cattle were more likely to be deworming calves than those producers that sold no finished cattle.

Availability of Cattle Handling Facilities and Deworming Calves

One hundred fifty seven (8.7 percent) of the respondents had no cattle handling facilities. One thousand six hundred forty four (91.3 percent) of the respondents had some type of cattle handling facilities. Approximately 45 percent of the producers with no available cattle handling facilities were deworming calves compared to 74 percent of the producers that had cattle handling facilities available. The chi square test indicated a significant relationship between the

availability of cattle handling facilities and deworming calves. Producers with cattle handling facilities were more likely to be deworming calves than those producers with no facilities.

Farming Status and Deworming Calves

One thousand twenty seven (58.1 percent) of the producers responding were full-time farmers. Seven hundred forty two (41.9 percent) of the respondents were part-time farmers. Approximately 71 percent of the full-time farmers were deworming calves compared to approximately 72 percent of the part-time farmers. The chi square test indicated no significant relationship between farming status and the deworming of calves. Full-time farmers were no more likely than part-time farmers to be deworming calves.

Major Source of Farm Income and Deworming Calves

Nine hundred fourteen (51.8 percent) of the respondents raised beef cattle as their major source of farm income. Eight hundred fifty (48.2 percent) of the respondents raised row crops as their major source of farm income. Approximately 72 percent of the respondents that had beef cattle as their major source of farm income were deworming calves compared to 71 percent of the respondents that had row crops as their major source of farm income. The chi square test indicated no significant relationship between the major source of farm income and deworming calves. Producers that raised beef cattle as their major source of farm income were no more likely to be deworming calves than producers that raised row crops as their major source of farm income.

Producers' Age and Deworming Calves

Seven hundred fifty (41.6 percent) of the respondents were under age 50. One thousand fifty one (58.4 percent) of the respondents were age 50 or over. Approximately 76 percent of the producers under age 50 were deworming calves compared to approximately 68 percent of the producers age 50 or over. The chi square test indicated a significant relationship between the producers' age and the deworming of calves. Producers under the age of 50 were more likely to be deworming calves than producers age 50 or over.

Extension Contacted and Deworming Calves

Two hundred ten (11.7 percent) of the respondents did not contact Extension. One thousand five hundred eighty nine (88.3 percent) of the respondents did contact Extension. Approximately 57 percent of the respondents that did not contact Extension were deworming calves compared to approximately 73 percent of the respondents that did contact Extension. The chi square test indicated a significant relationship between whether or not Extension was contacted and the deworming of calves. Producers that contacted Extension were more likely to be deworming calves than those that did not contact Extension.

Table Summary and Discussion

In summary of data in Table VI, major findings indicate:

1. That producers' herd size, finished cattle sold, availability of cattle handling facilities, age and contact with Extension were significantly related to whether or not they were deworming calves.

Tennessee beef cattle producers who had larger herds, those who sold some finished cattle, those who had cattle handling facilities, those who were younger and those who had contacted Extension agents were more likely than others to have dewormed their calves.

2. That producers' farming status and major source of farm income were not significantly related to whether or not producers were deworming calves.

VII. SELECTED FACTORS IN RELATIONSHIP TO WHETHER OR NOT BEEF PRODUCERS WERE VACCINATING FOR LEPTOSPIROSIS

Findings regarding relationships between six selected factors of beef cattle producers and whether or not the producers were vaccinating for leptospirosis within their herds are presented in this section (see Table VII). Relationships between the independent variables (i.e., herd size, availability of cattle handling facilities, farming status, major source of farm income, producers' age and Extension contacts) and the dependent variable (i.e., whether or not producers were vaccinating for leptospirosis) were tested using the chi square test. The .05 probability level was accepted as significant.

Herd Size and Vaccinating for Leptospirosis

Eight hundred eighty five (49.1 percent) of the respondents had a herd size of 40 head or less. Nine hundred sixteen (50.9 percent) of the respondents had a herd size of 41 or more head. Of all producers responding 56 percent were vaccinating for leptospirosis. Approximately 50 percent of the producers with a herd size of 40 or

TABLE VII. Selected Factors in Relationship to Whether or not Beef Producers were Vaccinating for Leptospirosis

Selected Factors	Vaccinated Cows and Replacement Heifers for Leptospirosis					
	No		Yes		Total	
	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents
Herd Size						
40-less	444	50.2	441	49.8	885	49.1
41-over	343	37.4	573	62.6	916	50.9
Statistic χ^2	= 29.10; p = 0.00					
Had Cattle Handling Facilities						
No	124	78.5	34	21.5	158	8.7
Yes	664	40.2	984	59.7	1,648	91.3
Statistic χ^2	= 83.95; p = 0.00					
Farming Status						
Full-time	449	43.8	576	56.2	1,025	57.8
Part-time	327	43.7	422	56.3	749	42.2
Statistic χ^2	= 0.00; p = 0.99					
Major Source Farm Income						
Beef Cattle	383	41.9	530	58.1	913	51.6
Row crop	393	45.9	463	54.1	856	48.4
Statistic χ^2	= 2.66; p = 0.10					
Producers' Age						
Under 50	283	37.7	468	62.3	751	41.6
50-Over	505	47.9	550	52.1	1,055	58.4
Statistic χ^2	= 18.09; p = 0.00					
Extension Contacted						
No	131	63.3	76	36.7	207	11.5
Yes	656	41.1	941	58.9	1,597	88.5
Statistic χ^2	= 35.85; p = 0.00					

less were vaccinating for leptospirosis compared to approximately 63 percent of the producers with a herd size of 40 or more. The chi square test indicated a significant relationship between herd size and vaccinating for leptospirosis. Larger producers were more likely than smaller producers to be vaccinating for leptospirosis.

Availability of Cattle Handling Facilities and Vaccinating for Leptospirosis

One hundred fifty eight (8.7 percent) of the respondents had no cattle handling facilities. One thousand six hundred forty eight (91.3 percent) of the respondents had some type of cattle handling facilities. Approximately 22 percent of the producers with no cattle handling facilities were vaccinating for leptospirosis compared to approximately 60 percent of the producers that had cattle handling facilities available. The chi square test indicated a significant relationship between the availability of cattle handling facilities and vaccinating for leptospirosis. Producers with cattle handling facilities were more likely to be vaccinating for leptospirosis than those producers with no facilities.

Farming Status and Vaccinating for Leptospirosis

One thousand twenty five (57.8 percent) of the producers responding were full-time farmers. Seven hundred forty nine (44.2 percent) of the respondents were part-time farmers. Approximately 56 percent of the full-time farmers were vaccinating for leptospirosis compared to approximately 56 percent of the part-time farmers. The chi square

test indicated no significant relationship between farming status and vaccinating for leptospirosis. Full-time farmers were no more likely to be vaccinating for leptospirosis than part-time farmers.

Major Source of Farm Income and Vaccinating for Leptospirosis

Nine hundred thirteen (51.6 percent) of the respondents raised beef cattle as their major source of farm income. Eight hundred fifty six (48.4 percent) of the respondents raised row crops as their major source of farm income. Approximately 58 percent of the respondents that had beef cattle as their major source of farm income were vaccinating for leptospirosis compared to approximately 54 percent of the respondents that had row crops as their major source of farm income. The chi square test indicated no significant relationship between the major source of farm income and vaccinating for leptospirosis. Producers that raised beef cattle as their major source of farm income were no more likely to be vaccinating for leptospirosis than producers that raised row crops as their major source of farm income.

Producers' Age and Vaccinating for Leptospirosis

Seven hundred fifty one (41.6 percent) of the respondents were under age 50. One thousand fifty five (58.4 percent) of the respondents were age 50 or over. Approximately 62 percent of the producers under age 50 were vaccinating for leptospirosis compared to 52 percent of the producers age 50 or over. The chi square test indicated a significant relationship between the producers' age and

vaccinating for leptospirosis. Producers under the age of 50 were more likely to be vaccinating for leptospirosis than producers age 50 or over.

Extension Contacted and Vaccinating for Leptospirosis

Two hundred seven (11.5 percent) of the respondents did not contact Extension. One thousand five hundred ninety seven (88.5 percent) of the respondents did contact Extension. Approximately 37 percent of the respondents that did not contact Extension were vaccinating for leptospirosis compared to 59 percent of the respondents that did contact Extension. The chi square test indicated a significant relationship between whether or not Extension was contacted and vaccinating for leptospirosis. Producers that contacted Extension were more likely to be vaccinating for leptospirosis than those that did not contact Extension.

Table Summary and Discussion

In summary of data in Table VII, major findings indicate:

1. That producers' herd size, availability of cattle handling facilities, age and contact with Extension were significantly related to whether or not they were vaccinating for leptospirosis. Tennessee beef producers who had a herd size of 41 or more head, those who had cattle handling facilities, those who were younger and those who had contacts with Extension agents were more likely than others to have vaccinated their cows and heifers for leptospirosis.

2. That farming status and major source of farm income were not significantly related to vaccinating for leptospirosis.

VIII. SELECTED FACTORS IN RELATIONSHIP TO WHETHER OR NOT BEEF PRODUCERS WERE ENROLLED IN TBCIP

Findings regarding relationships between six selected factors of beef cattle producers and whether or not the producers were enrolled in the Tennessee Beef Cattle Improvement Program are presented in this section (see Table VIII). Relationships between the independent variables (i.e., herd size, availability of cattle handling facilities, farming status, major source of farm income, producers' age and Extension contacts) and the dependent variable (i.e., whether or not producers were enrolled in TBCIP) were tested using the chi square test. The .05 probability level was accepted as significant.

Herd Size and Enrollment in TBCIP

Eight hundred eighty nine (49.3 percent) of the respondents had a herd size of 40 head or less. Nine hundred thirteen (50.7 percent) of the producers had a herd size of 41 or more head. Of all producers responding to this question approximately 9 percent were enrolled in TBCIP. Approximately 7 percent of the producers with a herd size of 40 or less were enrolled in TBCIP compared to approximately 11 percent of the producers with a herd size of 41 or more. The chi square test indicated a significant relationship between herd size and whether or not producers were enrolled in TBCIP. Larger producers were more likely than small producers to be enrolled in TBCIP.

TABLE VIII. Selected Factors in Relationship to Whether or not Beef Producers were Enrolled in TBCIP

Selected Factors	Herd Enrolled in TBCIP					
	No		Yes		Total	
	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents	Number of Respondents	Percent Respondents
Herd Size						
40-less	829	93.3	60	6.7	889	49.3
41-over	817	89.5	96	10.5	913	50.7
Statistic	$\chi^2 = 7.61; p = 0.01$					
Had Cattle Handling Facilities						
No	155	98.7	2	1.3	157	8.7
Yes	1,493	90.5	156	9.5	1,649	91.3
Statistic	$\chi^2 = 11.03; p = 0.00$					
Farming Status						
Full-time	929	90.5	97	9.5	1,026	57.8
Part-time	688	91.9	61	8.1	749	42.2
Statistic	$\chi^2 = 0.76; p = 0.38$					
Major Source Farm Income						
Beef cattle	848	92.8	66	7.2	914	51.6
Row crop	765	89.4	91	10.6	856	48.4
Statistic	$\chi^2 = 5.94; p = 0.01$					
Producers' Age						
Under 50	670	89.2	81	10.8	751	41.6
50-over	978	92.7	77	7.3	1,055	58.4
Statistic	$\chi^2 = 6.25; p = 0.01$					
Extension Contacted						
No	203	97.6	5	2.4	208	11.5
Yes	1,443	90.4	153	9.6	1,596	88.5
Statistic	$\chi^2 = 10.99; p = 0.00$					

Availability of Cattle Handling Facilities and
Enrolled in TBCIP

One hundred fifty seven (8.7 percent) of the respondents had no cattle handling facilities. One thousand six hundred forty nine (91.3 percent) of the respondents had some type of cattle handling facilities. Approximately 1 percent of the producers with no available cattle handling facilities were enrolled in TBCIP compared to approximately 10 percent of the producers that had cattle handling facilities available. The chi square test indicated a significant relationship between the availability of cattle handling facilities and whether or not producers were enrolled in TBCIP. Producers with cattle handling facilities were more likely to be enrolled in TBCIP than those producers with no facilities.

Farming Status and Enrolled in TBCIP

One thousand twenty six (57.8 percent) of the producers responding were full-time farmers. Seven hundred forty nine (42.2 percent) of the respondents were part-time farmers. Approximately 10 percent of the full-time farmers were enrolled in TBCIP compared to 8 percent of the part-time farmers. The chi square test indicated no significant relationship between farming status and whether or not producers were enrolled in TBCIP. Full-time farmers were no more likely to be enrolled in TBCIP than part-time farmers.

Major Source of Farm Income and Enrolled in TBCIP

Nine hundred fourteen (51.6 percent) of the respondents raised beef cattle as their major source of farm income. Eight hundred fifty

six (48.4 percent) of the respondents raised row crops as their major source of farm income. Approximately 7 percent of the respondents that had beef cattle as their major source of farm income were enrolled in TBCIP compared to approximately 11 percent of the respondents that had row crops as their major source of farm income. The chi square test indicated a significant relationship between the major source of farm income and whether or not producers were enrolled in TBCIP. Producers that raised row crops as their major source of farm income were more likely to be enrolled in TBCIP than producers that raised beef cattle as their major source of farm income.

Producers' Age and Enrollment in TBCIP

Seven hundred fifty one (41.6 percent) of the respondents were under age 50. One thousand fifty five (58.4 percent) of the respondents were age 50 or over. Approximately 11 percent of the producers under age 50 were enrolled in TBCIP compared to 7 percent of the producers age 50 or over. The chi square test indicated a significant relationship between the producers' age and whether or not they were enrolled in TBCIP. Producers under the age of 50 were more likely to be enrolled in TBCIP than producers age 50 or over.

Extension Contacted and Enrolled in TBCIP

Two hundred eight (11.5 percent) of the respondents did not contact Extension. One thousand five hundred ninety six (88.5 percent) of the respondents did contact Extension. Approximately 2 percent of the respondents that did not contact Extension were enrolled in TBCIP

compared to approximately 10 percent of the respondents that did contact Extension. The chi square test indicated a significant relationship between whether or not Extension was contacted and whether or not producers were enrolled in TBCIP. Producers that contacted Extension were more likely to be enrolled in TBCIP than those that did not contact Extension.

Table Summary and Discussion

In summary of data in Table VIII, major findings indicate:

1. That producers' herd size, availability of cattle handling facilities, major source of farm income, age and contact with Extension were significantly related to whether or not they were enrolled in TBCIP. Tennessee beef cattle producers who had larger herds, those who had cattle handling facilities, those who gave row crop as their major source of farm income, those who were younger and those who had contacts with Extension agents were more likely than other producers to have their herd enrolled in the TBCIP.

2. That it was no more likely for a full-time farmer to have been enrolled in TBCIP than for a part-time farmer.

CHAPTER IV

SUMMARY OF MAJOR FINDINGS

I. PURPOSES AND SPECIFIC OBJECTIVES

Purposes

The purposes of this study were to determine the relationships between selected factors of beef cattle producers including Extension contacts and the use of recommended beef production practices. This information may be useful to county staffs and to state Extension specialists and administrators in targeting audiences to receive specific types of beef cattle production information.

Specific Objectives

The specific objectives of this study were:

1. To determine the relationship between selected factors of Tennessee beef cattle producers and the use of artificial insemination.
2. To determine the relationship between selected factors of Tennessee beef cattle producers and the use of performance tested bulls.
3. To determine the relationship between selected factors of Tennessee beef cattle producers and the use of cross-bred females.
4. To determine the relationship between selected factors of Tennessee beef cattle producers and the use of pregnancy checking.
5. To determine the relationship between selected factors of Tennessee beef cattle producers and the use of implants.

6. To determine the relationship between selected factors of Tennessee beef cattle producers and the practice of deworming calves.

7. To determine the relationship between selected factors of Tennessee beef cattle producers and the use of vaccinations for leptospirosis.

8. To determine the relationship between selected factors of Tennessee beef cattle producers and their frequency of enrollment in the Tennessee Beef Cattle Improvement Program.

II. METHOD OF INVESTIGATION

A total of 1,813 Tennessee beef cattle producers were randomly selected from 85 counties. Tennessee Extension agents collected the data.

The 1985 Tennessee Beef Cow-Calf Producer Survey was used to collect data from the producers. Extension agents used the "nth" number technique to identify beef cattle producers from county beef cattle mailing lists. Extension agents conducted personal interviews with the beef producers to obtain the data.

The data were coded and processed for computer analysis. Computations were made using the University of Tennessee Computing Center facilities. The chi square statistical test was used to determine the strength of the relationship between dependent and independent variables. Chi square values which achieved the .05 probability level was accepted as indicating a significant relationship between the variables.

III. MAJOR FINDINGS

Selected Factors of Producers and Use of Artificial Insemination

1. There was a significant relationship between the use of artificial insemination and 5 of the 6 selected factors studied. These factors were herd size, availability of cattle handling facilities, major source of farm income, producers age and Extension contacts. Tennessee beef cattle producers who had larger herds (i.e., over 40 cows), those who had cattle handling facilities, those who had row crop as their major source of farm income, those who were younger (i.e., under 50) and those who did have contacts with Extension agents during the previous 12 months were more likely than others to use artificial insemination.

2. Whether or not artificial insemination was used was not significantly related to farming status. Full-time farmers were no more likely than part-time farmers to have been using artificial insemination.

Selected Factors of Producers and Performance Tested Bulls Used

1. There was a significant relationship between the use of performance tested bulls and 2 of the 5 selected factors studied. Those factors were herd size and Extension contacts. Producers who had larger herds and those who had contacts over the previous 12 months with Extension agents were more likely than other producers to be using performance tested bulls.

2. Whether or not performance tested bulls were used was not significantly related to 3 of the selected factors. Those factors were farming status, major source of farm income and producers' age.

Selected Factors of Producers and the Use of Cross-Bred Females

1. There was a significant relationship between the use of cross-bred females and 2 of the 5 selected factors studied. Those factors were herd size and producers' age. Producers who had smaller herds (i.e., 40 head or less) and those who were older (i.e., 50 or older) were more likely than other producers to be using cross-bred females.

2. Whether or not cross-bred females were used was not significantly related to 3 of the selected factors. Those factors were producers' farming status, major source of farm income and Extension contacts.

Selected Factors of Producers and Pregnancy Checking

1. There was a significant relationship between pregnancy checking and 4 of the 6 selected factors studied. Those factors were herd size, availability of cattle handling facilities, producers' age and Extension contacts. Producers who had smaller herds, those who had cattle handling facilities, those who were younger and those who had contacts with Extension agents were more likely than others to have their cows and heifers pregnancy checked.

2. Whether or not producers were pregnancy checking was not significantly related to 2 of the selected factors. Those factors were farming status and major source of farm income.

Selected Factors of Producers and Implants Used

1. There was a significant relationship between the use of implants and 6 of the 7 selected factors studied. Those factors were herd size, sold finished cattle, cattle handling facilities, major source of farm income, producers' age and Extension contacts.

Producers who sold finished cattle, those who had cattle handling facilities, those who had beef cattle as their major source of farm income, those who were younger and those who had made contact with Extension agents were more likely than others to use calf implants.

2. Whether or not implants were used was not significantly related to farming status.

Selected Factors of Producers and Deworming Calves

1. There was a significant relationship between deworming calves and 5 of the 7 selected factors studied. Those factors were herd size, finished cattle sold, availability of cattle handling facilities, producers' age and Extension contacts. Producers who had larger herds, those who sold finished cattle, those who had cattle handling facilities, those who were younger and those who had contacts over the past 12 months with Extension agents were more likely than others to deworm their calves.

2. Whether or not producers were deworming calves was not significantly related to 2 of the selected factors. Those factors were farming status and major source of farm income.

Selected Factors of Producers and Vaccinating
for Leptospirosis

1. There was a significant relationship between vaccinating for leptospirosis and 4 of the 6 selected factors studied. Those factors were herd size, availability of cattle handling facilities, producers' age and Extension contacts. Tennessee beef cattle producers who had larger herds, those who had cattle handling facilities, those under 50 years of age and those who had Extension contacts were more likely than other producers to vaccinate cows and heifers for leptospirosis.

2. Vaccinating for leptospirosis was not significantly related to 2 of the selected factors. Those factors were farming status and major source of farm income.

Selected Factors of Producers and Enrollment in TBCIP

1. There was a significant relationship between enrollment in the TBCIP and 5 of the 6 selected factors studied. Those factors were herd size, availability of cattle handling facilities, major source of farm income, producers' age and Extension contacts. Beef producers who had cattle handling facilities, those who had beef as their major source of farm income, those who were younger and those who had contacts with Extension agents were more likely than other producers to have their herd enrolled in the Tennessee Beef Cattle Improvement Program.

2. Whether or not producers were enrolled in the TBCIP was not significantly related to 1 of the selected factors. That factor was farming status.

IV. IMPLICATIONS AND RECOMMENDATIONS

Based upon the findings of this study it may be concluded that Tennessee beef cattle producers are using a relatively low percentage of recommended production practices. Producers with a herd size of 41 head or more were more likely to have been using recommended practices than producers with smaller herds. An average of only 40 percent of the producers with the larger herds were using recommended production practices. It seems that Extension has a wide range of producers to target in beef production. Extension must continue contact with the 40 percent of the large producers that were using recommended practices but also must focus its educational efforts on the remaining producers of various sizes.

Eighty eight percent of the producers had contact with Extension yet only 37 percent of those producers on the average were using the eight recommended beef production practices. This suggests the need for educational efforts to convince producers that following recommended practices increases net profits.

The Agricultural Extension Service has frequent contact with beef producers seeking information. It is hoped that the findings in this study will help Extension agents aim their programs directly at the many producers that would benefit from using recommended production practices. The benefit to producers would ultimately be net profit.

V. RECOMMENDATIONS FOR FURTHER STUDY

1. Similar studies should be made periodically to determine to what extent recommended practices are being used by beef producers.

This determination would help Extension identify clientele and their needs.

2. Similar studies should be conducted in other areas of Extension to determine the effect of Extension programs on the clientele.

3. Survey data is susceptible to the person collecting the data. Unbiased data should always be the ultimate goal. Efforts should be continued in improving surveys and surveying techniques.

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APPENDIX

1985 TENNESSEE BEEF COW-CALF PRODUCER SURVEY
(Interview producers with herds of 25 or more breeding age cows)
(See Instructions on Last Page)

Card No. 1
(1)

County Name _____

Respondent No. 0 0
(2) (3)Co. TEMIS No. (4) (5) (6)

PART I: GENERAL BEEF CATTLE SITUATION

For your most recently weaned calf crop give the:

- (7-9) _____ a. NUMBER OF COWS AND HEIFERS EXPOSED TO BULL(s)?
(10-11) _____ b. NUMBER OF CALVES LOST AT BIRTH OR DIED WITHIN TWO DAYS AFTER BIRTH?
(12-14) _____ c. NUMBER OF CALVES WEANED?
(15) _____ d. NUMBER OF BULLS USED?

PART II: MANAGEMENT SITUATION AND PRACTICES

Note: Use the most recently weaned calf crop in reference to questions in Part II.

A. Calving Management*

- (16-19) _____/_____/_____
Mo. Year 1. MONTH AND YEAR FIRST CALF BORN? (e.g. 0 1/8 4 = Jan. 1984; 9999 = don't know)
(20-23) _____/_____/_____
Mo. Year 2. MONTH AND YEAR LAST CALF BORN? (e.g. 0 9/8 4 = Sept. 1984; 9999 = don't know)
(24-26) _____ 3. NUMBER OF CALVES BORN WITHIN 45 DAYS AFTER BIRTH OF THE FIRST CALF? (9999 = don't know)

B. Breeding Management

- (27) _____ 1. FEMALES AND BULL(S) ARE OF THE SAME OR OF DIFFERENT BREEDS? (1 = same; 2 = different)
(28) _____ 2. FEMALES ARE CROSSBRED OR STRAIGHTBRED? (1 = crossbred; 2 = straightbred; 3 = both)
(29) _____ 3. WERE BULLS EVALUATED FOR BREEDING SOUNDNESS 30-45 DAYS BEFORE BREEDING SEASON BEGAN? (1 = no; 2 = yes; 9 = DNA)
(30) _____ 4. WERE PERFORMANCE TESTED BULLS USED? (1 = no; 2 = yes)
(31) _____ 5. WERE COWS AND HEIFERS PREGNANCY CHECKED? (1 = none; 2 = part; 3 = all)
(32) _____ 6. WERE OPEN FEMALES CULLED FROM HERD? (1 = none; 2 = part; 3 = all)
(33-34) _____ 7. AVERAGE AGE OF REPLACEMENT HEIFERS WHEN BRED? (in months)
(35-37) _____ 8. AVERAGE WEIGHT OF REPLACEMENT HEIFERS WHEN BRED?
(38) _____ 9. HERD ENROLLED IN TBCIP OR A SIMILAR BREED PERFORMANCE TESTING PROGRAM? (1 = no; 2 = yes)
(39-41) _____ 10. NUMBER OF COWS AND HEIFERS BRED BY ARTIFICIAL INSEMINATION? (0 0 0 = not any)

*Coding Instructions:

1. All entries are right justified.
2. A zero (0) = none or not any.
3. A nine (9) in each column = does not apply or don't know.

C. Feeding Management

- (42) _____ 1. KIND(S) OF HARVESTED FORAGES FED LAST WINTER? (1 = hay; 2 = silage; 3 = both hay and silage)
- (43) _____ 2. HERD GROUPED LAST WINTER BY AGE AND STAGE OF PRODUCTION AND FED SEPARATELY? (1 = no; 2 = yes)
- (44) _____ 3. DRY PREGNANT COWS FED LOWER QUALITY FORAGES EARLY IN WINTERING PERIOD? (1 = no; 2 = yes)
- (45) _____ 4. KINDS OF CROP RESIDUE FED LAST WINTER? (1 = none fed; 2 = corn; 3 = soybeans; 4 = both corn and soybeans; 5 = other)
- (46) _____ 5. FESCUE STOCKPILED FOR LATE FALL AND WINTER GRAZING? (1 = no; 2 = yes)
- (47) _____ 6. HAY AND/OR SILAGE "FORAGE TESTED" BEFORE WINTER FEEDING? (1 = no; 2 = yes)
- (48) _____ 7. KIND(S) OF SUPPLEMENTAL PROTEIN FED EACH DAY DURING WINTERING PERIOD? (1 = none fed; 2 = cottonseed or soybean meal; 3 = block or cubes; 4 = liquid)

D. Health Management (during past 12-months)

1. Vaccination

- (49) _____ a. COWS AND REPLACEMENT HEIFERS VACCINATED FOR LEPTOSPIROSIS? (1 = no; 2 = yes)
- (50) _____ b. COWS VACCINATED FOR IBR, BVD AND PI3? (1 = no; 2 = yes, part; 3 = yes, all)
- (51) _____ c. CALVES VACCINATED FOR IBR, BVD AND PI3? (1 = no; 2 = yes, part; 3 = yes, all)
- (52) _____ d. CALVES VACCINATED FOR BLACKLEG? (1 = no; 2 = yes, part; 3 = yes, all)
- (53) _____ e. REPLACEMENT HEIFERS VACCINATED FOR BRUCELLOSIS? (1 = no; 2 = yes, part; 3 = yes, all; 9 = no replacement heifers)
- (54) _____ f. NUMBER OF TIMES CALVES IMPLANTED? (0 = not any)

2. Deworming (during past 12-months)

- (55) _____ a. SEASON WHEN COWS AND BULLS DEWORMED? (1 = not dewormed; 2 = Fall only; 3 = Spring only; 4 = both Fall and Spring; 5 = other)
- (56) _____ b. CALVES DEWORMED? (Most recent calf crop) (1 = no; 2 = yes)

3. Fly Control

- (57) _____ a. PRIMARY METHOD USED TO CONTROL HORN AND FACE FLIES? (1 = none used; 2 = Backrubbers and/or oilers; 3 = Dustbags; 4 = Backrubbers with flaps; 5 = Oral larvacides; 6 = ear tags)
- (58-59) _____ b. MONTH BEGAN TREATMENT FOR HORN AND FACE FLIES? (e.g. 0 4 = April)

4. Grub and Lice Control (past 12-months)

- (60) _____ a. MONTH CATTLE TREATED FOR LICE? (1 = did not treat; 2 = by Nov. 1; 3 = by Nov. 1 and again in Feb.; 4 = did not treat until after Nov. 1 and lice build-up was present)
- (61) _____ b. CATTLE TREATED FOR GRUBS BEFORE NOV. 1? (1 = not treated; 2 = yes, treated before Nov. 1; 3 = yes, treated but not before Nov. 1)

Card No. 2
(1)
Respondent No. 0 0
(2) (3)

County No. (4) (5) (6)

PART III: FORAGE PRODUCTION

- (7-10) _____ 1. ACRES OF PERMANENT PASTURE LAND?
(11-14) _____ 2. ACRES OF FESCUE PASTURE?
(15-17) _____ 3. ACRES OF TEMPORARY WINTER AND/OR SUMMER PASTURE?
(18-20) _____ 4. ESTIMATED PERCENT OF PERMANENT PASTURE LAND THAT HAD 30 PERCENT OR MORE LEGUME IN 1985?

PART IV: CATTLE HANDLING FACILITIES

- (21) _____ 1. CATTLE HANDLING FACILITIES AVAILABLE FOR WORKING CATTLE? (1 = headgate only; 2 = headgate and holding chute; 3 = headgate, holding chute and working chute; 4 = headgate, holding chute, working chute and crowding pen; 5 = headgate, holding chute, working chute, crowding pens and holding pens; 9 = none of the above)
(22-23) _____ 2. WIDTH OF WORKING CHUTE? (inches) (99 = no working chute)
(24-25) _____ 3. YEAR CATTLE HANDLING FACILITIES CONSTRUCTED? (e.g. 8 3 = 1983; 99 = do not have handling facilities)
(26) _____ 4. DID YOU OBTAIN THE PLANS FOR CONSTRUCTING HANDLING FACILITIES FROM THE EXTENSION SERVICE ONLY, FROM THE EXTENSION SERVICE AND OTHER SOURCES OR FROM OTHER SOURCES ONLY? (1 = Extension service only; 2 = Extension service and other sources; 3 = other sources only; 9 = no plans were used or none constructed)

PART V: MARKETING

- (27-29) _____ 1. NUMBER OF FEEDER CALVES SOLD AT WEANING? (1985 calf crop; 0 0 0 = not any)
(30-32) _____ 2. AVERAGE WEIGHT OF FEEDER CALVES SOLD AT WEANING? (1985 calf crop; 999 = none sold)
(33-35) _____ 3. NUMBER OF CALVES SOLD LAST SPRING (1984 calf crop) AS BACKGROUNDED SHORT YEARLINGS? (0 0 0 = not any)
(36-38) _____ 4. NUMBER OF CALVES SOLD SUMMER OR FALL (1985) AS BACKGROUNDED LONG YEARLINGS? (0 0 0 = not any)
(39-40) _____ 5. NUMBER CALVES FROM 1984 CALF CROP FINISHED AND SOLD AS SLAUGHTER CATTLE? (0 0 0 = not any)
(41) _____ 6. METHOD USED TO MARKET THE MAJORITY OF THE MOST RECENTLY SOLD FEEDER CALF CROP? (1 = weekly auction; 2 = organized feeder calf sale; 3 = local trader; 4 = direct to backgrounder or feeder)
(42) _____ 7. REASON FOR SELECTING THE MARKETING METHOD USED? (i.e. question 6) (1 = better price; 2 = cattle are not graded; 3 = habit; 4 = lower cost; 5 = frequency of sales; 6 = other)

PART VI: EXTENSION CONTACTS

(Note: Agent and/or producer should estimate the number of contacts the producer had with Extension Agents over the past 12-months)

- (43) _____ 1. BEEF CATTLE MEETINGS ATTENDED?
(44-45) _____ 2. OFFICE VISITS MADE? (regarding beef cattle)
(46-47) _____ 3. TELEPHONE CALLS MADE? (regarding beef cattle)
(48-49) _____ 4. FARM VISITS RECEIVED? (total number)
(50-51) _____ 5. EXTENSION CIRCULAR OR NEWSLETTERS RECEIVED?

Page 4

PART VII: RESPONDENT AND FARM SITUATION

- (52) _____ 1. FARMING STATUS? (1 = full-time farm; 2 = part-time farm; 3 = retired)
- (53-54) _____ 2. ESTIMATED AGE OF FARM OPERATOR?
- (55) _____ 3. MAJOR SOURCE OF FARM INCOME? (1 = feeder calves; 2 = slaughter cattle; 3 = row crop sales; 4 = other)

PART VIII: APPLICATION OF INFORMATION

What practices have you adopted the past four (4) years that have helped you improve your beef operation? (Note: Agent briefly list practices below; e.g. crossbreeding, implanting)

GENERAL SURVEY INSTRUCTIONS

Date Due: December 1985.

Disposition: Mail completed survey forms to your Associate District Supervisor.

Population to be Surveyed: Beef Cow-Calf producers who have 25 or more breeding age cows.

Counties to be Surveyed: All counties.

Number of producers to be Surveyed:

- a. Counties having 15 to 50 producers survey 15
- b. Counties having 51 to 100 producers survey 20
- c. Counties having 101 to 300 producers survey 25
- d. Counties having over 300 producers survey 30.

Sampling Procedures:

- a. Use an up-to-date listing.
- b. Apply the Nth number technique to identify producers to be interviewed. Select a few alternates to replace those who for good reasons cannot be interviewed.

The Agricultural Extension Service offers its programs to all eligible persons regardless of race, color, national origin, sex or handicap and is an Equal Opportunity Employer.

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COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

The University of Tennessee Institute of Agriculture, U.S. Department of Agriculture, and county governments cooperating in furtherance of Acts of May 8 and June 30, 1914.

Agricultural Extension Service
M. Lloyd Downen, Dean

VITA

Victor L. Ivy was born April 14, 1956 to Mr. and Mrs. L. H. "Cotton" Ivy of Decaturville, Decatur County, Tennessee. He attended Parsons, Troy and Union City Elementary Schools and graduated from Union City High School in 1974.

After graduation, he attended the University of Tennessee at Martin, majoring in Animal Science. He received a Bachelor of Science degree in Agriculture in 1977.

After farming full-time for three and one-half years and working for Farmers Home Administration for two and one-half years, he was employed as Assistant Extension Agent in Madison County in October, 1983.

He is a member of the Tennessee Association of Agricultural Agents and Specialists, the National Association of County Agricultural Agents, Tennessee Association of Extension 4-H Workers, the National Association of Extension 4-H Workers, the University of Tennessee National Alumni Association and the University of Tennessee Century Club.