

AN ASSESSMENT OF BEEF PRODUCTION PRACTICES UTILIZED
BY SELECTED EXTENSION CLIENTELE IN CHOCTAW
AND PUSHMATAHA COUNTIES
OF OKLAHOMA

By

MARTY RAY MONTAGUE

Bachelor of Science

Oklahoma State University

Stillwater, Oklahoma

1982

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
AUGUST, 1997

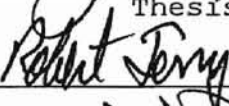
OKLAHOMA STATE UNIVERSITY


AN ASSESSMENT OF BEEF PRODUCTION PRACTICES UTILIZED
BY SELECTED EXTENSION CLIENTELE IN CHOCTAW
AND PUSHMATAHA COUNTIES
OF OKLAHOMA

Thesis Approved:



Thesis Adviser









Dean of the Graduate College

ACKNOWLEDGEMENTS

The author wishes to express his appreciation to the many beef producers in Choctaw and Pushmataha Counties in Oklahoma for their time, effort and sincerity in completing and returning the questionnaire for this study.

Sincere appreciation is expressed to Dr. James D. White for his assistance and advice as the author's major adviser and committee chairman; and to Drs. Steven C. Smith, James P. Key, and Fred H. Rayfield for their valuable time and assistance in serving on his graduate committee.

A special expression of love, thanks, and eternal gratitude is expressed to the author's parents, Bob and Ramona, for their unending love, support, and teaching of life skills. The author wishes to express his deepest love and devotion to his wife, Teresa, who continually encouraged and lended support during this study. And to the author's children Mandy Jo and Matthew David, who made special sacrifices in order that he might successfully complete this study.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
Statement of the Problem	2
Purpose of the Study	2
Objectives of the Study	2
Scope of the Study	3
Assumptions of the Study	3
Definition of Terms	4
II. REVIEW OF THE LITERATURE	5
Introductions	5
Profile of the two Counties	6
Forage Characteristics in the Area	7
Markets Available	12
Selected Production Practices in the Area	13
Education/Training of Clientele	16
Summary	17
III. METHODOLOGY	19
Introduction	19
Objectives of the Study	19
Population	20
Development of Instrument	22
Internal Review Board Approval	23
Collection of Data	24
Analysis of Data	24
IV. PRESENTATION AND ANALYSIS OF DATA	26
Extent of Respondents' Participation	26
Findings of the Study	27
V. CONCLUSIONS, AND RECOMMENDATIONS	57
Introductions	57
Procedures ..	57
Summary of the Major Findings	58
Objective One: Producer characteristics	58

Chapter	Page
Objective Two: Selected Practices Currently Utilized.....	60
Objective Three: Technical Information Preferences.	63
Objective Four: Major Limiting Factors.....	64
Conclusions	64
Recommendations	66
Implications	67
BIBLIOGRAPHY	69
APPENDICES	71
APPENDIX A - IRB STATEMENT	72
APPENDIX B - LETTER TO BEEF PRODUCERS	74
APPENDIX C - INSTRUMENT	76

LIST OF TABLES

Table	Page
I. A Distribution of Beef Producers by Gender	27
II. A Distribution of Beef Producers by Age	28
III. A Distribution of Beef Producers by Level of Formal Education	29
IV. A Distribution of Beef Producers by Years of Beef Production Experience	30
V. A Summary of Methods Used to Sustain Beef Cattle Operations Among Selected Beef Producers in Choctaw and Pushmataha Counties . .	31
VI. A Distribution of Beef Producers by Type of Beef Cattle Operation	32
VII. A Distribution of Beef Producers by Size of Commercial Cow-Calf Operation	34
VIII. A Distribution of Beef Producers by Size of Stocker Operation	35
IX. A Distribution of Beef Producers by Size of Purebred Operation	36
X. A Summary of Marketing Options Utilized by Selected Beef Producers in Choctaw and Pushmataha Counties	37
XI. A Summary of Whether or Not Beef Producer Respondents Conducted Selected Herd Health Practices	38
XII. A Summary of Whether or Not Beef Producer Respondents Conducted Selected Management Practices	40

XIII. A Summary of Calving Season Frequently Used Among Beef Producer Respondents in Choctaw and Pushmataha Counties by Length of Calving Interval in Days	41
XIV. A Summary of Whether or Not Beef Producer Respondents Carried Out Selected Reproduction Practices	42
XV. A Summary of Whether or Not Beef Producers in Choctaw and Pushmataha Counties Conducted Selected Herd Improvement Practices	43
XVI. A Summary of Primary Sources of Grazing Nutrition Utilized by Beef Producer Respondents in the Two-County Area by Forage Species	44
XVII. A Summary of Grazing Schemes Conducted by Beef Producer Respondents in Choctaw and Pushmataha Counties by Selected Grazing Strategies	45
XVIII. A Summary of Protein Supplements Used for Winter Feeding Cows by Beef Producer Respondents in Choctaw and Pushmataha Counties by Type of Protein Supplement	46
XIX. A Summary of Protein Supplements Used for Winter Feeding Cows by Beef Producer Respondents in Choctaw and Pushmataha Counties by Quality of Selected Protein Supplements	47
XX. A Summary of Feedstuff Procurement by Beef Producer Respondents in Choctaw and Pushmataha Counties by Selected Methods of Acquisition	48
XXI. A Summary of indicated preferences for receiving Technical Information by Beef Producer Respondents In Choctaw and Pushmataha Counties..	49
XXII. A Distribution of Beef Producer Respondents Reliable Sources of Technical Information Having Significant Influence on Beef Cattle Operations.....	51

XXIII. A Distribution of Major Limiting Factors as Perceived by Beef Producer Respondents in Choctaw and Pushmataha Counties	54
XXIV. A Distribution of Whether or Not Beef Producer Respondents Would be Receptive to Adopting Proven Beef Production Practices ...	56

LIST OF FIGURES

Figure	Page
I. Geographical Location of Study	21

CHAPTER I

INTRODUCTION

Southeast Oklahoma has long been known as an agricultural area. Although the agriculture in the area is extremely diverse, beef cattle are one of the mainstays. Cow-calf operations are the rule with scattered stocker operations throughout the area. The beef cattle industry has a significant impact on the economy of southeast Oklahoma and particularly in Choctaw and Pushmataha Counties.

With a shrinking agricultural population, and a more efficient minded society it is becoming more important that beef cattle producers, especially small producers, become more aware of the production practices which affect their profit. Beef profitability will be the deciding factor in the survival of the global economy.

The two-county area of Choctaw and Pushmataha Counties contain a total of 563,551 acres in farms with the average farm size being 343 acres (Oklahoma Agricultural Statistics, 1995). The number of farms in the area total 1635, of these 1409 have cattle involved in the operation to some extent. The percentage of beef operations then are a part of 86% of all farms in the area, making beef cattle a significant part

of the farming operations in the two-county area. The inventory of the beef cattle numbers in Choctaw and Pushmataha Counties total 106,000 head of cattle with 57,000 of these being beef cows (Oklahoma Agriculture Statistics, 1995)

STATEMENT OF THE PROBLEM

The problem is a lack of profitability by beef producers as a result of financial pressure caused by low cattle market prices, and relatively high input costs, and low producer production efficiency. Beef producers in this area could become more efficient with the use of proven beef production practices as recommended by the Oklahoma Cooperative Extension Service.

PURPOSE OF THE STUDY

The purpose of this study was to determine the current beef production practices conducted by selected extension clientele in Choctaw and Pushmataha Counties in southeast Oklahoma.

OBJECTIVES OF THE STUDY

To accomplish the purpose of the study the following objectives were established:

- 1) To determine producer characteristics among Oklahoma

Cooperative Extension Service (OCES) clientele conducting beef cattle operations in a two-county area of southeast Oklahoma.

2) To determine selected management practices currently utilized by extension clientele/beef producers in Choctaw and Pushmataha Counties in southeast Oklahoma.

3) To determine the preferences concerning technical information provided by the extension service as well as the perceived importance of reliable sources of technical information.

4) To determine major limiting factors as perceived by producers concerning their operations.

SCOPE OF THE STUDY

The scope of the study included selected OCES clientele identified as beef cattle producers in Choctaw and Pushmataha Counties of Oklahoma.

ASSUMPTIONS OF THE STUDY

In order to accomplish the objectives of the study the following assumptions were made:

1) All respondents surveyed would report accurate information to the best of their ability.

2) The respondents surveyed represent an accurate cross section of beef producers and beef production practices in the two-county area.

3) The survey instrument would assess sufficient data to meet the needs of the objectives.

DEFINITION OF TERMS

The following are terms defined as used in this study:

Farm- any place from which \$1000 or more of agricultural products were produced and sold or normally would have been sold during the census year (Oklahoma Census of Agriculture, 1987).

Beef profitability - dollar value above all costs both variable and fixed in the beef enterprise.

OCES - Oklahoma Cooperative Extension Service affiliated with Oklahoma State University.

CHAPTER II

REVIEW OF LITERATURE

INTRODUCTION

Beef producers in Choctaw and Pushmataha Counties in Oklahoma have long been thought to disregard production practices proven to enhance and increase beef cattle profitability. The combined total of 106,000 head of beef cattle in the two-county area makes beef cattle a leading agricultural commodity (Oklahoma Agriculture Statistics, 1995). Therefore, beef production practices that enhance profitability to the producer would have a positive impact on the economy of the area.

The purpose of this chapter was to present an overview of related and indirectly related literature that identified a number of factors relevant to this study. The presentation of this review was divided into five major areas, and a summary to facilitate clarity and organization. The areas were: (1) Profile of the two counties, (2) Forage Characteristics in the Area, (3) Markets Available, (4) Selected Production Practices in the Area and (5) Education/Training of Clientele.

PROFILE OF THE TWO COUNTIES

The two-county area of Choctaw and Pushmataha Counties of Oklahoma are located in the extreme southeast portion of the state. Choctaw County is bordered on the south by the state line, Red River. Choctaw County is bordered on the west by Bryan County, on the east by McCurtain County and on the north by Pushmataha County.

Pushmataha County then, is bordered by Atoka County on the west, McCurtain County on the east, and primarily by Latimer County on the north, with short borders of LeFlore County on the northeast, and Pittsburg County on the northwest.

The area reaching from southern Choctaw County to northern Pushmataha County is very diverse with a wide range of soil types and management systems. With respect to the beef industry, the two-counties of Choctaw and Pushmataha have a combined total of 106,000 head of beef cattle (Oklahoma Agricultural Statistics, 1995). This number may be broken down into beef cows 57,000 head, with the remainder being steers, heifers, and calves (Oklahoma Agriculture Statistics, 1995).

The human population of the two-county area totals 26,299 combined with 58% of the population living in a rural area (Oklahoma Census of Agriculture, 1987).

The major highways that run through the area include US 70, Indian Nation Turnpike, US 271, Oklahoma 3 and 7, and

Oklahoma 2. Also, the infrastructure includes a number of other paved and dirt roads, many of which are used for the logging industry, as much of the area is timbered.

FORAGE CHARACTERISTICS IN THE AREA

"Grassland agriculture is a good way to farm and to live, the best way I know of to use and improve soil, the very thing on which our life and civilization rest"

(Grasses "Yearbook of Agriculture 1948"). Much of Choctaw and Pushmataha Counties are not adapted to cultivation, however the area is well suited for the production of forages and according to former Secretary of Agriculture Clinton P. Anderson who said "that is a way of farming".

Much of Pushmataha and the eastern half of Choctaw County is heavily timbered. Also, Pushmataha County holds the Kiamichi Mountains making much of the area difficult to plant improved varieties of forage, leaving nature and the environment as the primary source of forage grasses.

The diversity of the soils from the southern end to the northern end of the two-county area is the major limiting factor. Soil depth ranges from 60+ inches in southern Choctaw County (Soil Survey of Choctaw County Oklahoma) to a very shallow 2-3 inches in parts of northern Pushmataha County (Soil Survey of Pushmataha County of Oklahoma).

Bermudagrass and bahia grass are the primary choices of improved forages. The average annual rainfall of 48.25 inches per year and an average 190 days with temperatures

above 32 degrees Fahrenheit (Soil Survey of Pushmataha County Oklahoma) the potential for high yields per acre are possible. The soils throughout the two-county area, are planted with improved varieties of bermudagrass which may produce 5-6 tons of forage per acre when properly fertilized. However, to achieve these yields all limiting factors must be corrected. To produce an extra ton of forage an additional 50 pounds of actual nitrogen must be applied (Johnson, et al., 1991).

The improved varieties of bermudagrass commonly include Coastal, Greenfield, Midland, and most recently Tifton 44. Coastal bermudagrass resulted from a natural cross at Tifton, Georgia, between Tift bermudagrass and a tall growing strain of bermudagrass from South Africa (Denman, et al., 1971). Greenfield bermudagrass was selected by W. C. Elder from a common type found growing on the Stillwater Station in 1947. Greenfield was released by the Oklahoma Experiment Station in 1954 (Denman, et al., 1971).

Midland bermudagrass has a long history of success in Oklahoma. Until the release of Hardie, it was the most winter-hardie variety available in the United States. With ample nitrogen fertilization the potential hay yields of five tons or more per acre are often achieved (Rommann, et al., 1991). Tifton 44 bermudagrass has the same high forage quality as Hardie, but Tifton 44 has less tolerance to cold winters (Rommann, et al., 1991).

Bahia grass is a warm-season perennial that will furnish forage over a long season of the year on certain soil types. It is one of the first permanent pasture grasses to furnish grazing in the spring and among the last to fade out in the fall (Monroe, 1967).

Choctaw and Pushmataha Counties combine to produce 120,000 tons of hay on 62,000 acres, for an average of 1.93 tons per acre (Oklahoma Agricultural Statistics, 1995). This includes 1300 acres of alfalfa which produces 4,400 tons for an average of 3.38 tons of alfalfa per acre (Oklahoma Agricultural Statistics, 1995).

Other forages produced in the area include a variety of clovers and legumes. Clovers and legumes should be selected and used based on the situation and intended use. Their individual requirements and economic potential will be greatly influenced by site selection, crop harvested, season, and soil type. Legumes may provide nitrogen production, pasture improvement, seed production, hay production, honey production, other soil improvement qualities, or a combination of the above.

The primary use of legumes is often times the pasture improvement qualities they possess. Nitrogen furnished to a companion grass crop is often more economical than commercial nitrogen fertilizer (Dalrymple, 1977). Also, benefits of increasing forage quality in the pasture program are of significant benefit. Legumes increase the amount of protein produced in the pasture system which often adds to

the average daily gain or increase in production of grazing animals.

Legumes in the pasture system also may increase or extend the grazing season by increasing the amount of total digestible nutrients produced per acre.

Hop clover is a widely used early legume which provides high quality grazing in the early spring months. Other widely used legumes in pasture situations include Arrowleaf Clover, White Clover, Red Clover, and Vetch. Although there is no official way to measure the usage of these forages in the pasture system, many beef producers are aware of their value as a high quality forage.

Arrowleaf Clover has a wide range of adaptation, but is less tolerant of acid soils than other legumes. Arrowleaf Clover produces best on well drained soils and may survive temperatures as low as 10°F. Arrowleaf is also a very high producer of high quality forage.

White Clover is best suited for areas of 40 or more inches of rainfall per year. White Clover is an outstanding pasture clover best adapted to bottomland clay and loamy soils well supplied with moisture, calcium and phosphorus.

Red Clover is best adapted to fertile sandy loam soils high in available phosphorus. Red clover is best suited for the northeastern part of the state, however, is used in pasture systems in southeastern Oklahoma as well.

Hairy Vetch is adapted to all well drained soils throughout much of the southern United States. Hairy Vetch

is only moderately sensitive to soil acidity and works well in winter temporary or permanent pasture systems.

Agroforestry is a relatively new term well suited for Choctaw and Pushmataha Counties for the practice of growing trees with agricultural crops and/or livestock on the same tract of land. In addition, agroforestry includes timber and livestock production with introduced pasture species or growing agricultural crops simultaneously with various tree species (Bidwell, et al., 1991). In the case of Choctaw and Pushmataha Counties the companion crop grown with timber, is forage which is used to produce beef. As a result, the timber industry provides the opportunity for long term financial returns while the forage underneath the forest canopy is harvested by livestock during the short term.

The cow-calf producer recognizes that protein is one of the most expensive nutrients required in a beef cattle wintering program. Therefore, many producers attempt to produce adapted forages which are high in protein.

Proteins are essentially derived from amino acids. Thousands of amino acids join together in a specific order to form a protein (Rommann, 1988) oxygen are the essential elements in the amino acids, and are obtainable through the process of photosynthesis. Every amino acid contains nitrogen, but nitrogen is not obtained through the process of photosynthesis and must be absorbed through the root system from the soil.

Amino acids can not be formed without nitrogen. If amino acids are not formed, protein can not be formed. Therefore, from a production standpoint, the relationship of protein, nitrogen, and amino acids are critical.

MARKETS AVAILABLE

Beef cattle play a very important role in the economy, not only in Choctaw and Pushmataha Counties but in the state of Oklahoma. In 1984, cattle generated over one billion dollars of revenue within the state of Oklahoma (Jobes, 1986). This revenue came from only 64 percent of the Oklahoma land base, and yet cattle from this land generated over 50 percent of the cash receipts in agriculture.

Many of the problems faced by agricultural producers regarding production have been solved by agronomists, animal scientists, agricultural engineers, and entomologists. These problems are solved using the laws of physical and biological sciences, laws that give consistent results.

Marketing, on the other hand, involves the study of the laws of social sciences such as economics and psychology (Hurt, et al., 1988). These laws are of human nature and based on observations. These laws are believed to hold true, but can't be proven to always hold true.

The marketing of beef cattle in the two-county area is widely diverse as well. Local auction markets are available at the county seats of each county. The Hugo Livestock

Commission Company in Hugo, Choctaw County, and the Antlers Livestock Commission Company in Antlers, Pushmataha County, receive a bulk of the beef cattle marketed in the area. Area markets utilized by beef producers include Paris Texas, Ada Oklahoma, and McAlester Oklahoma, and Oklahoma City.

Alternative and special markets are being developed in the area using video and satellite as an alternative marketing approach. These methods however, are usually limited to producers with the larger beef cattle numbers.

Specialty markets include annual production sales by several purebred beef producers. Management factors may influence the marketing method by small farmers

Marketing is a critical factor, particularly to those farmers having limitations upon land, capital and management (Toensmeyer, et al.). Large risks are involved for farmers operating under these conditions. An adequate job of marketing can help reduce and/or eliminate those risks (Toensmeyer, et al.).

SELECTED PRODUCTION PRACTICES IN THE AREA

A study by Lusby and Buchanan (1991) reveals that of the four districts in the state of Oklahoma, the southeast, of which Choctaw and Pushmataha Counties belong, only 59% of producers surveyed indicated they routinely individually identified cows. This would indicate that recognizing poor production performance on an individual basis would be

difficult. Cattle are routinely identified for two purposes: (1) to provide positive identification or recording performance information and (2) to serve as a means of establishing legal title (McPeak, 1986).

Individual identification and record keeping should aid in the overall herd management and lead to increased economic returns to the beef enterprise. The increase in economic returns are necessary for the continued survival in the beef production industry.

Various methods of identification are used including branding, ear tags, and tattoos. All of these are acceptable forms of individual identification.

Many production oriented management decisions have proven to be effective in producing more pounds of beef per acre. One of the common production problems encountered has been that of internal parasites and their control. A number of products are available for producer use. Routinely, cattle would be dewormed in the fall and again in the early spring. However, in a study conducted by (Smith, et al. 1990) concerning the effects of mid-summer deworming on the weight gain of cows and their calves the results showed a significantly improved August thru October weight gains when an anthelmintic was administered in August.

Reproduction is a significant key to a successful cow-calf operation. Directly related to reproduction is nutrition, both have a direct bearing on profitability. In order for the traditional cow-calf producer to have any

opportunity to be profitable, the producer must manage the cow herd to calve every twelve months. The breeding/calving season length is irrelevant. However, calving interval is imperative as well as calving percentage per cow exposed.

From the time a cow becomes pregnant, goes through the gestation period, delivers a calf at birth, the cow then has approximately 83 days in which to recover from the birth experience, lactate and rebreed. If the cow does not accomplish this, the calving interval will be extended, having a potential negative effect on profitability.

Body condition or body energy reserves at calving is the most important factor that influences the length of the interval from calving until the first postpartum estrus (Wettemann, et al., 1987). Therefore nutrition and reproduction are directly related and play a major role in the economics of the cow-calf operation.

The nutritional program in traditional cow-calf operations centers around the two nutrients of most concern, protein and energy. Cattle are forage consumers by nature and are most economical when the bulk of their requirements are met by the forages they eat.

During the winter months, when most forages are in the dormant stage and supplementation is required, protein gets the bulk of the discussion. However, it is important for producers to note "with too little protein in the diet, the bacteria will not efficiently digest roughages, while with too much protein in the diet, the protein will be deaminated

(the nitrogen removed) and used as a very expensive energy source" (Lusby, et al., 1990). A critical factor for the beef producer to understand is that beef nutrition must be managed from an economical standpoint.

EDUCATION/TRAINING OF CLIENTELE

A number of educational activities have been provided in the two-county area as a continual and on going educational process by the OCES. In the past five years educational activities provided by the Oklahoma Cooperative Extension Service in the two-county area have dealt with soil fertility, pasture management, cow-calf production, and herd health all with regard to economics.

Emphasis has been placed on the reproduction aspect of production with producer meetings designed to address calving management. Breeding soundness exams for bulls, and a demonstration of pelvic measurement for heifers have also been held.

Bull fertility is several times more important than that of a cow (Rice, 1990). Beef producers should realize that the bull carries half of the genetic potential for the entire calf crop. Also, the lack of productivity from one cow results in the loss of one calf at weaning time. The lack of productivity from one bull may mean the loss or delayed marketing of 30-40 calves.

Breeding soundness exams for bulls have been developed to assist producers locating bull reproductive problems ahead of breeding season. Bull fertility is more than a simple semen quality and quantity score. Fertility is the combination of finding cows in heat, breeding them, and finally getting them pregnant (Rice, 1990). During a breeding soundness exam, a bull is subjected to a semen quality test. However, the bull is also observed for any physical feet and leg disorders, measured for testicular development, internal organs are examined rectally, penis and prepuce is observed for abnormalities during semen collection.

The level of formal education for beef producers in the area was 2.4 years of college among all beef producers surveyed. This is not different from the rest of the state. (Lusby, et al., 1991).

SUMMARY

Beef producers in the two-county area of Choctaw and Pushmataha Counties conduct beef cattle operations with over 106,000 head. Private operations include more than 563,551 acres of land, with an average farm size of 343 acres. The beef producers in the area produce a total of 120,000 tons of hay annually which is over and above forage harvested by livestock. The improved forages utilized in the area are bermudagrass and bahia grass. Although most beef cattle are

marketed through conventional local auctions, alternative markets are in the process of being developed.

The production practices routinely conducted in the area are not noticeably different from the rest of the state. However, there is room for much needed improvement in the beef cattle industry from a profitability standpoint. The education level of beef producers in the area is also in line with the rest of the state with an average of 2.4 years of college per producer.

CHAPTER III

METHODOLOGY

INTRODUCTION

The beef cattle industry makes an important contribution to the economies of Choctaw and Pushmataha Counties. This study was designed to determine the beef production practices utilized among extension clientele in Choctaw and Pushmataha Counties of southeast Oklahoma. A further purpose was to determine the limiting factors constraining adoption of production practices by beef producers to improve efficiency and profitability. In addition, to determining current practices, are these same beef producers receptive to the adoption of new production practices if technical support was available?

OBJECTIVES

The objectives of this study were:

- 1) To determine producer characteristics among Oklahoma Cooperative Extension Service clientele conducting beef

cattle operations in Choctaw and Pushmataha Counties of Southeast Oklahoma.

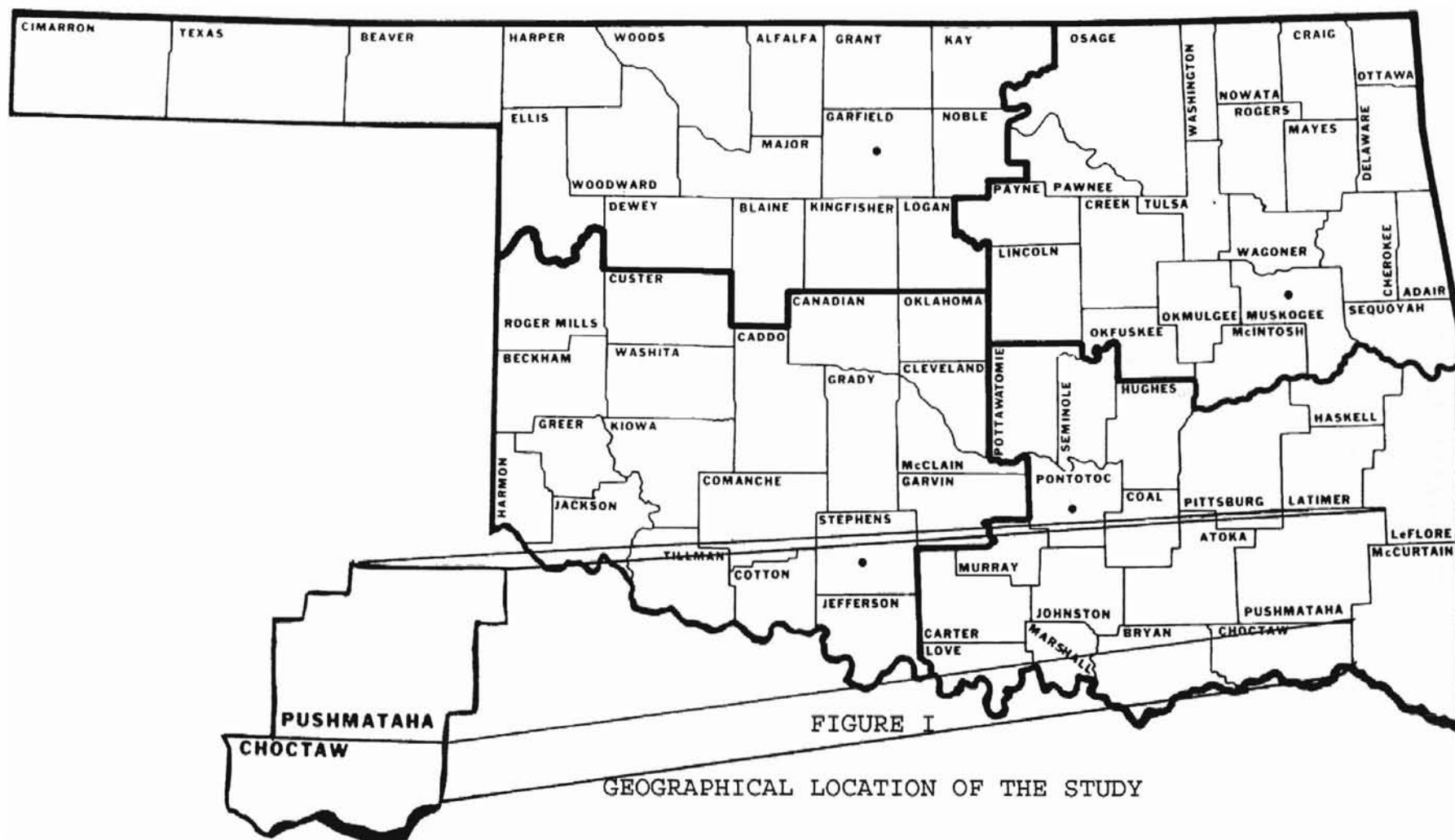
2) To determine selected management practices currently utilized by extension clientele/beef producers in Choctaw and Pushmataha Counties of Southeast Oklahoma .

3) To determine the preferences concerning technical information provided by the extension service as well as the perceived importance of reliable sources of technical information.

4) To determine major limiting factors as perceived by producers concerning their operations.

POPULATION

The population for this study consisted of 114 beef producers identified through the Extension beef producers list of Choctaw and Pushmataha Counties in southeast Oklahoma.



DEVELOPMENT OF THE INSTRUMENT

In formulating the questions for the instrument, the writer used the Oklahoma Cow-calf Index II by Lusby and Buchanan as a primary reference source. Also, the writer used his personal experience as an Agricultural Agent for the Cooperative Extension Service in the area in developing the questions to make up the mail survey.

The survey instrument was primarily a forced response mail questionnaire. The 31 forced response items included 12 yes and no questions primarily addressing selected practices which were designed to acquire nominal data; five questions concerning producer characteristics were developed using an interval format to acquire nominal data, while five questions also addressing producer characteristics were constructed utilizing an interval scale to obtain interval data. In addition, five questions in part five concerning nutritional practices were created employing an interval format to secure factual information, while three rank order questions examining preferences for receiving technical information, reliable sources of technical information, and limiting factors impacting producer operations were designed using an ordinal scale to achieve a rating and ranking of possible selected responses. The instrument was developed in a manner to solicit responses indicating the level of

management each respondent was achieving. The instrument responses will also provide direction relative to the development of educational programming needed by the beef producer clientele.

A computer search using the "PETE" system was conducted to locate references related to beef producers and associated production practices. Although several studies and references were found which dealt with many aspects of the beef industry, most were not relevant to this study.

A draft of the instrument was presented to the author's major adviser, four state extension animal science specialists, one area extension animal science specialist and other members of the thesis committee for review and suggestions.

INTERNAL REVIEW BOARD (IRB)

Federal regulations and Oklahoma State University policy require review and approval of all research studies that involve human subjects before investigators can begin their research. The Oklahoma State University Research Services and IRB conduct this review to protect the rights and welfare of human subjects involved in biomedical and behavioral research. In compliance with the aforementioned policy, this study received the proper surveillance and was

granted permission to continue. Futhermore, this research was assigned the following research project number:

AG-97-11.

COLLECTION OF DATA

The refined instrument along with a cover letter from the author was mailed to the beef producers on the Extension beef producer mailing list from the OSU Cooperative Extension offices in Choctaw and Pushmataha Counties in Southeast Oklahoma. The beef producer list in it's entirety contained the names and addresses of 114 beef producers in the two-county area.

The cover letter ask for a response to the questionnaire within 10 days. The initial instrument contained a code to maintain confidentiality and to allow the writer to conduct a follow-up to the non-respondents. A self addressed stamped envelope was enclosed for the convenience of the respondent and to increase the return rate of the survey.

ANALYSIS OF DATA

The data were compiled and tabulated in a manner designed to express the findings related to the purpose and objectives of the study. A SAS statistical computer program, was used to analyze the data. "The FREQ procedure

produces one-way to n-way frequency and cross tabulation tables" (p. 513).

Frequency tables show the distribution of variable values; for example, a variable "A" may have "six" possible values. The frequency table for "A" shows how many observations in the data set have the first value of "A", how many have the second value, and so on. Crosstabulation tables show combined frequency distributions for two or more variables. Other features of FREQ:

- a variable in the data set may be used as a weighting variable
- for two-way tables, FREQ computes several measures of association
- results can be output to a SAS data set (p. 513)

This research was descriptive in nature, therefore, frequencies, percentages, and rank order were selected as the appropriate means of reporting the findings. Key (1992) emphasized in his research design course; "The primary use of descriptive statistics was to describe information or data through the use of numbers" (p. 175).

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The purpose of this chapter was to report the results from the questionnaire used to conduct the study. The purpose of the study was to determine selected beef production practices among extension clientele in a two-county area in southeast Oklahoma.

The scope of the study included extension clientele identified as beef cattle producers in the OCES producer directories' of Choctaw and Pushmataha Counties of Oklahoma. The producer directories' included the mailing list of beef producers identified on the Agriculture mailing lists. The 31 item questionnaire was mailed to the beef producers to elicit their responses.

Extent of Respondents' Participation

A total of 80 (70.2%) respondents participated in the study survey; however, all did not answer every question and some responded with multiple responses. Specifically, survey questions which asked for respondents' rankings/ratings received fewer responses than the total

respondents (N=82). A total of 80 useable survey instruments were used in the study.

Findings of the Study

The data in Table I revealed that 88.5% of beef producer respondents were male. The remainder of the respondents, 11.5% were female.

TABLE I
A DISTRIBUTION OF BEEF PRODUCERS BY GENDER

Gender	Frequency (N=78)	Percent (%)
Female	9	11.5
Male	69	88.5
Total	78	100.0

The data in Table II showed the largest percentage (28.8%) of the beef producer respondents were between the ages of 36-45. Data compiled in Table II also indicated the second largest group of beef producer respondents (21.2%) to be between the ages of 56-65. This data revealed half of the beef producer respondents were in one of these two age groups.

The data in Table II further revealed the remaining fifty percent of the beef producer respondents included 16.2

percent who were 46-55 years of age, 13.8 percent were 66-75 years of age, 12.5 percent were 26-35 years of age, and five percent made up the smallest percentage which were 76 years or older.

TABLE II
A DISTRIBUTION OF BEEF PRODUCERS BY AGE

Age Interval	Frequency (N=80)	Percent (%)
25 Years or less	2	2.5
26-35	10	12.5
36-45	23	28.8
46-55	13	16.2
56-65	17	21.2
66-75	11	13.8
76 Years or older	4	5.0
Total	80	100.0

The data in Table III indicated the highest level of formal education among beef producer respondents in the two-county area 50 percent were high school graduates, while 22.5 percent held the baccalaureate degree and 6.2 percent had earned a masters degree. The data also revealed that 8.8 percent were Junior College graduates, 2.5 percent

indicated "other" and 10 percent stated that the tenth grade was their highest level of formal education.

TABLE III
A DISTRIBUTION OF BEEF PRODUCERS BY
LEVEL OF FORMAL EDUCATION

Level of Formal Education	Frequency (N=80)	Percent (%)
Highest Grade Completed	8	10.0
High School Graduate	40	50.0
Junior College Graduate	7	8.8
B.S. Degree	18	22.5
M.S. Degree	5	6.2
Ph.D.	-	-
Other	2	2.5
Total	80	100.0

The data in Table IV revealed that over 21 percent of the beef producer respondents had 41 years or more of experience in the beef industry, while 16 percent had between 26 to 30 years of experience, and 15 percent had between 16 to 20 years of experience. The data also showed 11 percent of beef producer respondents reported having 11 to 15 years of experience, while 10 percent had between 36

to 40 years of experience, and approximately nine percent reported having between 31 to 35 and 6 to 10 years of experience respectively. The data further showed six percent of the beef producer respondents having 21 to 25 years of experience, while only 2.5 percent reported having five years or less experience in the beef cattle industry.

TABLE IV
A DISTRIBUTION OF BEEF PRODUCERS BY
YEARS OF BEEF PRODUCTION EXPERIENCE

Years of Beef Production Experience	Frequency (N=80)	Percent (%)
5 Years or less	2	2.5
6-10 Years	7	8.8
11-15 Years	9	11.2
16-20 Years	12	15.0
21-25 Years	5	6.2
26-30 Years	13	16.2
31-35 Years	7	8.8
36-40 Years	8	10.0
41 Years or more	17	21.3
Total	80	100.0

The data in Table V illustrated that of the total beef producer respondents, 50 percent of the beef cattle

operations were sustained by off farm income by both husband and wife, while 31 percent of the beef cattle operations were sustained by the off farm income of one spouse. Approximately 19 percent of beef cattle operations in this study reported both husband and wife worked full time in the beef operation.

TABLE V

A SUMMARY OF METHODS USED TO SUSTAIN BEEF CATTLE
OPERATIONS AMONG SELECTED BEEF PRODUCERS IN
CHOCTAW AND PUSHMATAHA COUNTIES

Method of Sustaining Beef Operations	Frequency (N=82)	Percent (%)
Off farm income by both husband and wife	40	50.0
Only 1 spouse working off farm	25	31.2
Both husband and wife work full time in operation	15	18.8
Total	80	100.0

The data in Table VI revealed that of the beef producer respondents, 70 percent of the operations were commercial cow-calf type operations. The data also revealed 11 percent of the beef cattle operations were purebred cow-calf type operations, while approximately nine percent are combination cow-calf and stocker operations. Six percent of the beef producer respondents identified their operation as a stocker

operation, while approximately three percent of the beef producer respondents identified their operation as a combination of cow-calf, stocker and purebred operations.

TABLE VI
A DISTRIBUTION OF BEEF PRODUCERS BY
TYPE OF BEEF CATTLE OPERATION

Type of Beef Cattle Operation	Frequency (N=82)	Percent (%)
Cow-Calf) (commercial, crossbred)	56	70.0
Stocker	5	6.2
Cow-Calf (Purebred, breeding stock)	9	11.3
Combination of Cow-Calf and Stockers	7	8.8
Combination of Cow-Calf Stocker & Purebred	2	2.5
Combination of stockers and Purebred operation	-	-
Other	1	1.2
Total		100.0

The data in Table VII indicated 28 percent of the 74 beef producer respondents reporting to have commercial cow-calf operations have between 26 and 50 head of cows, approximately 18 percent reported having 51 to 75 cows, and

14 percent reported having 76 to 100 cows in their commercial operations. Eleven percent of the commercial cow-calf producer respondents reported a scope of between one and 25 cows in their operation, while nine percent reported between 101 and 150 cow operations. The data also indicated four percent of the commercial cow-calf respondents reported having between 151 to 200 head and another four percent having 251 to 300 head of cows in their operation. Only three percent of the commercial cow-calf respondents reported having more than 301 head of production females while one percent reported having between 201 and 250 cows in their herds. Six (8%) of the respondents stated they were not in the cow-calf business or marked "Not Applicable" on the survey.

TABLE VII
A DISTRIBUTION OF BEEF PRODUCERS BY SIZE
OF THE COMMERCIAL COW-CALF OPERATION

Size of Commercial Cow-Calf Operation	Frequency (N=74)	Percent (%)
Not in Cow-Calf Business	2	2.7
1-25 Head of Females in Production	8	10.8
26-50	21	28.4
51-75	13	17.6
76-100	10	13.5
101-150	7	9.4
151-200	3	4.1
201-250	1	1.3
251-300	3	4.1
301 head of production females or more	2	2.7
Not Applicable	4	5.4
Total		100.0

The size of the stocker cattle operations were reported in Table VIII. Sixty-four percent of the 66 beef producer respondents reported having "No Stocker Cattle", however, of the remaining 36 percent; approximately 14 percent reported between one and 50 of stocker cattle per year, while 11 percent reported 51 to 100 head of stocker cattle in their

operations. The data also revealed 4.5 percent of the beef cattle respondents had between 151 to 200 head of stocker cattle, while 1.5 percent of the respondents reported having 201 to 300, 301 to 400, and 501 to 750 head of stocker respectively. Three percent of the beef cattle respondents reported having 1000 head or more of stocker cattle in their operations.

TABLE VIII
A DISTRIBUTION OF BEEF PRODUCERS
BY SIZE OF STOCKER OPERATION

Size of Stocker Operation	Frequency (N=66)	Percent (%)
No Stocker Cattle	42	63.6
1-50 Head	9	13.6
51-100	7	10.6
101-150	-	-
151-200	3	4.5
201-300	1	1.5
301-400	1	1.5
401-500	-	-
501-750	1	1.5
751-1000	-	-
1000 Head or more	2	3.0
Total	66	100.0

The data in Table IX revealed 75 percent of the beef producer respondents did not have purebred operations. However, of the remaining 25 percent; 17 percent reported having one to 50 head of females in the operation, while four percent had 51 to 100 head of purebred females in their operations. The data also revealed just over one percent of the beef producer respondents reported 101 to 150 head, 151 to 200 head and 251 head or more females in production respectively.

TABLE IX
A DISTRIBUTION OF BEEF PRODUCERS BY
SIZE OF THE PUREBRED OPERATION

Size of Operation (Purebred)	Frequency (N=75)	Percent(%)
Not in Purebred Business	56	74.7
1-50 Head of females in production	13	17.3
51-100	3	4.3
101-150	1	1.3
151-200	1	1.3
201-250	-	-
251 Head of females in production or more	1	1.3
Total	75	100.0

The data in Table X revealed that of the 80 beef producer respondents a total of 115 responses were made, which indicated beef producers in the two-county area utilized more than one market. Seventy-three percent utilize "Local Community Auctions" to market their cattle, while 55 percent of the beef producer respondents utilize "Area Stockyards", nine percent market cattle at the Oklahoma City market, three percent marketed their cattle direct to stocker operations and five percent market their cattle directly to feedlot operations.

TABLE X

A SUMMARY OF SELECTED MARKETING OPTIONS UTILIZED BY BEEF PRODUCER RESPONDENTS IN CHOCTAW AND PUSHMATAHA COUNTIES

Marketing Options Utilized in Your Operation	Frequency (N=82)	Percent (%)
Local Community Auction (Hugo, Antlers)	58	72.5
Area Stockyards (Paris, Ada, McAlester)	44	55.0
Oklahoma National Stockyards (Commission Company)	7	8.8
Direct to Stocker Operators	2	2.5
Direct to Feedlot Operators	4	5.0
Retained Ownership to Packer	-	-
Video Marketing	-	-
Other	-	-

The data in Table XI summarize whether beef producer respondents conducted selected herd health practices. The data indicated that of the 78 respondents conducting a "Vaccination Program" 96.2 percent responded yes while 3.8 percent responded no. The data also indicated that of the 74 respondents responding to the "Brucellosis Calfhood Vaccination" issue 82 percent reported calfhood vaccinations as a health management practice, while 18 percent reported that they did not use calfhood vaccination in the management of their operation. Furthermore, the data revealed that of the 78 respondents reporting when asked about a "Routine Parasite Control" 95 percent reported using a parasite control program, while five percent reported using no parasite control methods in their beef operations.

TABLE XI

A SUMMARY OF WHETHER BEEF PRODUCER RESPONDENTS
CONDUCTED SELECTED HERD HEALTH PRACTICES

Selected Herd Health Practices	Distribution of Respondents					
	Yes		No		Total	
	N	%	N	%	N	%
Vaccination Program	75	96.2	3	3.8	78	100
Brucellosis Calfhood Vaccination	61	82.4	13	17.6	74	100
Routine Parasite Control	74	94.9	4	5.1	78	100

The data in Table XII summarized whether beef producer respondents conducted selected management practices within their beef cattle operations to enhance efficiency and profitability. The data indicated 81 percent of the 79 respondents castrate bull calves as part of their management practice, while 19 percent did not. The data also revealed that of the 75 respondents 40 percent utilize growth stimulants as part of their beef cattle management practices, while 60 percent did not. The results in Table XII revealed that of the 76 beef producer respondents; 71 percent conducted soil tests, while 29 percent did not conduct routine soil testing as part of their management practices. The data also indicated that 36 percent of the 75 respondents conducted forage testing, while 64 percent did not conduct forage testing as part of their management practices.

TABLE XII

A SUMMARY OF WHETHER BEEF PRODUCER RESPONDENTS
CONDUCTED SELECTED MANAGEMENT PRACTICES

Selected Management Practices	Distribution of Respondents					
	Yes		No		Total	
	N	%	N	%	N	%
Castration of Bull Calves	64	81	15	19	79	100
Utilization of Growth Stimulants	30	40	45	60	75	100
Conducted Soil Testing	54	71.1	22	28.9	76	100
Conducted Forage Testing	27	36	48	64	75	100

The data shown in Table XIII was a summary of the calving season interval as indicated by beef producer respondents in Choctaw and Pushmataha Counties by length of calving season in days. The data indicated 15 percent of the 76 respondents conducted a less than 60 day calving season, while 41 percent reported a 60 to 90 day calving interval. The data also indicated 13 percent of the respondents utilize a 90 to 120 day calving interval, and 32 percent report a calving a season of more than 120 days.

TABLE XIII

A SUMMARY OF THE CALVING INTERVAL FREQUENTLY PRACTICED AMONG
BEEF PRODUCER RESPONDENTS IN CHOCTAW AND PUSHMATAHA
COUNTIES BY LENGTH OF CALVING SEASON IN DAYS

Calving Interval in Days	Frequency (N=76)	Percentage (%)
< 60 Days	11	14.5
60 - 90 Days	31	40.8
90 - 120 Days	10	13.2
120 Days + (year around)	24	31.6
Total	76	100

A summary of whether beef producer respondents carried out selected reproduction practices was shown in Table XIV. The data indicated that of the 75 respondents reporting; 33 percent fertility test sires as part of their beef cattle management practices, while 67 percent did not. The data also indicates 23 percent pregnancy test their cows as part of the management practices, while 77 percent did not pregnancy test the cows in the herd.

TABLE XIV

A SUMMARY OF WHETHER BEEF PRODUCER RESPONDENTS
CARRIED OUT SELECTED REPRODUCTION PRACTICES

Selected Reproduction Practices	<u>Distribution of Respondents</u>					
	N	<u>Yes</u> %	N	<u>No</u> %	N	<u>Total</u> %
Fertility Testing of Sires	25	33.3	50	66.7	75	100
Pregnancy Testing of Cowherd	17	23.0	57	77.0	74	100

A summary of whether beef producers in Choctaw and Pushmataha Counties conducted selected herd improvement practices was shown in Table XV. The data revealed 47 percent of the 74 respondents indicated they keep individual cow records in their beef operations, while 53 percent report that they did not use individual cow records. The data also revealed in Table XV that 36 percent of the 76 respondents indicated they use performance tested sires in their beef operations, while 64 percent report they did not use performance tested sires as part of their beef cattle breeding operations.

TABLE XV

A SUMMARY OF WHETHER BEEF PRODUCERS IN CHOCTAW
AND PUSHMATAHA COUNTIES CONDUCTED SELECTED
HERD IMPROVEMENT PRACTICES

Selected Herd Improvement Practices	Distribution of Respondents					
	Yes		No		Total	
	N	%	N	%	N	%
Keep Individual Cow Records	35	47.3	39	52.7	74	100
Use Performance Tested Sires	27	35.5	49	64.5	76	100

The data in Table XVI represented a summary of producer respondents primary sources of forage species. The data indicated 32 percent of respondents utilized native range in their beef operations, while 98 percent indicated bermuda, bahia, and/or dallisgrass as a primary source of forage in their beef operations. Data in Table XVI also indicated 41 percent utilized fescue as a primary forage species, while 36 percent report the use of legumes as a forage species in their operations. The data also revealed four percent utilize wheat pasture, while three percent indicated "other" as a primary source of forage.

TABLE XVI

A SUMMARY OF PRIMARY SOURCES OF GRAZING NUTRITION UTILIZED
BY BEEF PRODUCER RESPONDENTS IN THE TWO-COUNTY
AREA BY FORAGE SPECIES

Forage Species	Frequency	Percentage (%)
Native Range (Bluestem, Indiangrass, Switchgrass)	26	32.1
Bermuda, Bahia and/or Dallisgrass	79	97.5
Fescue	33	40.7
Wheat Pasture	3	3.7
Legumes	29	35.8
Other	2	2.5

A summary of selected grazing strategies indicated by respondents was shown in Table XVII. The data indicated 53 percent of the 80 respondents use rotational grazing, while 38 percent continuously graze pastures in their operations. The data also showed 10 percent of the beef producer respondents used seasonal grazing in the management of their beef operations.

TABLE XVII

A SUMMARY OF GRAZING SCHEMES CONDUCTED BY BEEF PRODUCER
RESPONDENTS IN CHOCTAW AND PUSHMATAHA COUNTIES
BY SELECTED GRAZING STRATEGIES

Selected Grazing Strategy	Frequency (N=80)	Percent (%)
Rotational Grazing	42	52.5
Seasonal Grazing	8	10.0
Continuous Grazing	30	37.5
Early Intensive Grazing	-	-
Total	80	100

The data in Table XVIII represented a summary of protein supplements used for winter feeding of cows by producer respondents in the two-county area by type of protein supplement. The data indicated 58 percent of respondents feed natural protein pellets, while 36 percent selected the "other" response on the survey. The data also revealed eight percent used liquid feed, while four percent of the respondents utilized alfalfa hay as a type of protein supplement for the cow herd during the winter months.

TABLE XVIII

A SUMMARY OF PROTEIN SUPPLEMENTS USED FOR WINTER FEEDING COWS BY BEEF PRODUCER RESPONDENTS IN CHOCTAW AND PUSHMATAHA COUNTIES BY TYPE OF PROTEIN SUPPLEMENT

Types of Protein Supplement	Frequency	Percent (%)
Natural Protein Pellets	46	57.5
Urea Based Pellets	-	-
Liquid Feed (Urea/Molasses blend)	6	7.5
Alfalfa Hay	3	3.8
Other	29	36.3

A summary of quality of selected protein supplements utilized by beef producer respondents was shown in Table XIX. The data indicated 63 percent of the respondents used high protein (cottonseed, soybean, peanut, alfalfa base) supplements, while 26 percent indicated using medium protein (16-24%) supplements in their operation. The data also revealed 25 percent utilized "high quality" hay as a winter supplement, and five percent use urea based supplements. The data in Table XIX also showed that four percent represented respondents feeding the low protein supplements as well as indicating "other".

TABLE XIX

A SUMMARY OF PROTEIN SUPPLEMENTS USED FOR WINTER FEEDING
COWS BY BEEF PRODUCER RESPONDENTS IN CHOCTAW AND PUSHMATAHA
COUNTIES BY LEVEL OF PROTEIN SUPPLEMENTS

Level of Protein	Frequency	Percent (%)
High Protein (Cottonseed, Soybean, Peanut, Alfalfa base)	50	62.5
Medium Protein (16-24%)	21	26.3
Low Protein (12-14%)	3	3.8
High Quality Hay	20	25.0
Urea	4	5.0
Other	3	3.8

The data in Table XX represented a summary of feedstuff procurement by selected methods of acquisition. The data revealed 68 percent of beef producer respondents indicated they purchased feed from Local feed distributors. Also 19 percent acquired feed in Truck load lots direct from the mill, while 15 percent purchase feedstuffs in truck load lots from a feed broker.

TABLE XX

A SUMMARY OF FEEDSTUFF PROCUREMENT BY BEEF PRODUCER
RESPONDENTS IN CHOCTAW AND PUSHMATAHA COUNTIES
BY SELECTED METHODS OF ACQUISITION

Selected Methods of Acquisition	Frequency	Percentage (%)
Truck load lots direct from mill	15	18.8
Truck load lots form feed broker	12	15.0
Local feed distributor	54	67.5

The data in Table XXI summarized the indicated preferences for receiving technical information by beef producer respondents in Choctaw and Pushmataha Counties. The data revealed 72 percent of respondents prefer to receive technical information by way of the Extension Newsletter, while 40 percent prefer personal contact from the Extension Agent. The data also revealed 39 percent prefer to receive technical information at producer meetings, and 30 percent prefer tours of cattle operations. Included in the summary were results indicating 20 percent of beef producer respondents prefer on-farm demonstrations, while 12 percent prefer newspaper articles, and 11 percent prefer other methods of receiving technical information.

TABLE XXI

A SUMMARY OF INDICATED SOURCES AND EXTENT OF USE FOR
RECEIVING TECHNICAL INFORMATION AMONG BEEF PRODUCER
RESPONDENTS IN CHOCTAW AND PUSHMATAHA COUNTIES

Selected Sources of Technical Information	<u>Distribution</u>	
	Frequency (N=74)	Percentage (%)
Extension Newsletter (results of field trials etc.)	58	71.6
Extension Newspaper article	10	12.3
Personal Contact	32	39.5
Producer Meetings	31	38.3
Tours of Cattle Operations	24	29.6
On-farm Demonstrations	16	19.8
Other	9	11.1

The data in Table XXII revealed the Cooperative Extension was by far the most reliable source of information for the Choctaw - Pushmataha beef producers participating in this study. Over 54 percent of the 80 respondents ranked the "OSU Extension Service" as their most reliable source, while 11 (14.3%) producers ranked "Extension" second and nine (11.7%) ranked it third. Furthermore, observation of the mean ranks indicated "Extension" was easily the first choice among producer participants in this study as their most reliable source of technical information with a mean rank of 1.95.

Close behind "Extension" in the minds of producers as their second most reliable source of technical information were the "veterinarians" in the two-county area. Twenty-one (28.8%) producer respondents ranked the "veterinarians" as their first choice as a reliable source for technical information concerning the beef industry, while 31 (42.5%) ranked them second and 10 (13.7%) producers ranked "veterinarians" third as their preferred source of technical information. As indicated early, the "veterinarians" were close to "Extension" as a preference source of technical information with an overall mean rank of 2.0. It was also interesting to note that the "veterinarians" were easily the second choice among the producers concerning selected sources of technical information with over 42 percent of the respondents indicating they were a reliable source of information.

Although the first two preferred sources were rather close considering their overall mean ranks of 1.95 and 2.00 respectively; the remainder of the selected sources were ranked a distant third, fourth, etc. "Dealers and dealer representatives" ranked third with an overall mean score of 2.55, followed by "Friends & neighbors" with a mean score of 2.81, "The Media" with a surprising mean score of 2.95 and "other" a very distant sixth with a 3.83 mean score.

TABLE XXII

A DISTRIBUTION OF BEEF PRODUCER RANKINGS CONCERNING TECHNICAL INFORMATION HAVING A
SIGNIFICANT INFLUENCE ON BEEF CATTLE OPERATIONS BY MOST RELIABLE SOURCE

Most Reliable Source(s)	Distribution by Rank							
	N	1 %	N	2 %	N	3 %	N	4 %
OCES	42	54.5	11	14.3	9	11.7	10	13.0
Dealer represent. (feed, seed, fert.)	4	6.3	15	23.4	21	32.8	14	21.9
Friends/neighbors	8	12.3	8	12.3	16	24.6	15	23.1
Media	1	1.7	6	10.3	8	13.8	13	22.4
Veterinarian	21	28.8	31	42.5	10	13.7	8	11.0
Other	4	7.0	1	1.8	2	3.5	2	3.5

TABLE XXII
(continued)

Most Reliable Source(s)	Distribution by Rank				Sum of Ranks	Mean	Rank
	5		6				
	N	%	N	%			
OCES	5	6.5	-	-	156	1.95	1
Dealer Reps. (feed, seed, etc.)	9	14.1	1	1.6	204	2.55	3
Friends/neighbors	15	23.1	3	4.6	225	2.81	4
Media	23	39.7	7	12.1	236	2.95	5
Veterinarian	3	4.1	-	-	160	2.00	2
Other	2	3.5	46	80.7	306	3.83	6

The data in Table XXIII revealed "financial resources" were perceived by beef producer respondents as the number one limiting factor in their beef cattle operations with a mean of 1.80. The second major limiting factor affecting the beef enterprise was limited acres available with a mean of 2.15. Limited acres may also be related to financial resources, however, this association was not directly related in this study, due to the manner in which the question was asked.

The data also indicated that beef producer respondents perceived that the number three major limiting factor was small herd size with a mean rank of 2.48, while a mean rank of 2.80 was associated with labor as a limiting factor in the beef operation. Working facilities were indicated by beef producer respondents as the fifth ranking limitation with a mean score of 3.29, while limited feed storage had a mean rank of 3.61. Technical advice and "other" were ranked last as major limiting factors with mean ranks of 4.04 and 5.24 respectively.

TABLE XXIII

A DISTRIBUTION OF BEEF PRODUCER RANKINGS CONCERNING THE IMPACT OF BEEF CATTLE OPERATIONS IN CHOCTAW AND PUSHMATAHA COUNTIES BY SELECTED LIMITING FACTRS

Selected Limiting Factors	Distribution by Rank									
	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
Small Herd Size	5	7.9	22	34.9	14	22.2	11	17.5	5	7.9
Limited Acres Available	20	30.8	13	20.0	13	20.0	13	20.0	3	4.6
Working Facilities	4	6.3	3	4.8	9	14.3	19	30.2	17	27.0
Labor	10	16.7	7	11.7	10	16.7	8	13.3	13	21.7
Technical Advice	-	-	1	1.9	3	5.6	4	7.4	8	14.8
Limited Feed Storage	-	-	7	12.7	7	12.7	1	1.8	7	12.7
Financial Resources	33	51.6	13	20.3	5	7.8	4	6.3	4	6.3
Other	1	1.9	1	1.9	-	-	-	-	-	-

TABLE XXIII

(continued)

Selected Limiting Factors	Distribution by Rank						Sum of Ranks	Mean	Rank
	6		7		8				
	N	%	N	%	N	%			
Small Herd Size	4	6.3	2	3.2	-	-	198	2.48	3
Limited Acres Available	1	1.5	2	3.1	-	-	172	2.15	2
Working Facilities	10	15.9	1	1.6	-	-	263	3.29	5
Labor	11	18.3	1	1.7	-	-	224	2.80	4
Technical Advice	10	18.5	28	51.9	-	-	323	4.04	7
Limited Feed Storage	17	30.9	15	27.3	1	1.8	289	3.61	6
Financial Resources	1	1.6	4	6.3	-	-	144	1.80	1
Other	-	-	-	-	52	96.3	419	5.24	8

Table XXIV showed the distribution of whether beef producer respondents would be receptive to using proven beef production practices if technical advice was available to fit their operation. The data revealed that 95 percent of the beef producer respondents indicated that they would be receptive to the use of proven beef production practices if technical advice was available. However, five percent reported they would not be receptive.

TABLE XXIV

A DISTRIBUTION OF WHETHER BEEF PRODUCER
RESPONDENTS WOULD BE RECEPTIVE TO THE USE
OF PROVEN BEEF PRODUCTION PRACTICES

Receptive to adoption	Distribution of Respondents					
	Yes		No		Total	
	N	%	N	%	N	%
Proven beef production Practices	76	95.0	4	5.0	80	100

CHAPTER V

CONCLUSIONS, AND RECOMMENDATIONS

INTRODUCTION

Agriculture today rests solely in the hands of a shrinking agriculture population. Agriculture producers, including beef producers, therefore, must strive to produce their product efficiently and economically to survive in the global economy. The problem perceived by many as the lack of knowledge and use of proven beef production practices by producers.

Procedures

The population of this study included beef producers in Choctaw and Pushmataha Counties in southeast Oklahoma. The two counties represented 57,000 head of beef cows (Oklahoma Agriculture Statistics, 1995). The beef producers surveyed were selected from an agriculture producer mailing list in the Choctaw and Pushmataha Oklahoma Cooperative Extension Service offices. One hundred fourteen beef producers were identified in the two-county area. Thirty-one forced

response items were included in the mailed survey instrument.

The instrument designed by the researcher was deemed valid by a panel of area and state extension animal science specialists. The instrument was then mailed to one hundred fourteen (114) beef producers in the two-county area. The mailing contained the survey instrument, a letter of explanation asking for the instrument to be returned within ten (10) days, and a self-addressed, stamped return envelope. Eighty-two surveys (72%) were returned, a significant number, before the ten day deadline, therefore no letter of reminder was sent.

Summary of the Major Findings

Objective One: Producer Characteristics

Over 88 percent of the beef producer respondents in this study were male with almost a third (28.8%) of those between 36 to 45 years of age. It was also noteworthy to find that 85 percent of the producer respondents were 36 to over 76 years of age. Specifically five percent were 76 years old or older. Fifty percent of the respondents were high school graduates, while more than 22 percent were college graduates, and over six percent had earned masters degrees. An extremely important finding among the producer respondents in the two-county area was that over 21 percent

had more than 41 years of experience and an additional 10 percent had 36-40 years of experience with beef cattle. Over 60 percent of the producers in this study had 21 or more years of experience in the industry. Less than three percent had five years or less experience. It was also noteworthy to find that 50 percent of the beef operations conducted in this study were sustained with outside income by both the operator and spouse working off the farm/ranch. With regard to type of operation 70 percent of the producer respondents indicated they were cow-calf operators, while over 11 percent revealed they conducted a combination cow-calf and stocker operation. Consideration of the size of the cow-calf operations in the two-county area revealed more than 10 percent owned from one to 25 head, while over 59 percent conducted cow-calf operations ranging from 26 to 100 head. Over 26 percent of the operations on the other hand ranged in size from 101 head to over 301. More than five percent of the operations were larger than 301 head.

With regard to stocker operations over 63 percent of the respondents indicated they did not run stocker cattle, however, over 24 percent of the producers revealed that they conducted stocker operations from one to 100 head annually.

Concerning the size of purebred operations, the findings revealed over 17 percent of the purebred operations were from one to 50 head in size, while four percent range

from 51 to 100 head of purebred females. It was noteworthy to find one producer (1.3%) with over 251 head of purebred females in production in the two-county area.

Marketing considerations by the producer respondents revealed that over 72 percent of the producers sold their cattle locally at auction yards in Hugo and Antlers, while the remainder indicated they marketed cattle at area livestock auction markets in Paris Texas, Ada or McAlester Oklahoma, and almost nine percent marketed cattle at the Oklahoma National Stockyards/OKC. Only 2.5 percent and five percent of the producer respondents sold direct to stocker and feedlot operators respectively.

Objective Two: Selected Practices Currently Utilized

Concerning herd health, over 96 percent of the producer respondents in this study indicated they conducted a "vaccination" program. In addition, more than 82 percent stated they participated in a calfhood brucellosis vaccination program for their replacement heifers. Almost 95 percent of the respondents in the two-county area indicated they conducted routine parasite controls.

Management of beef cattle operation in the two-county area revealed that 81 percent of the respondents castrated their bull calves, while only 40 percent used implants to stimulate rate of gain. Even though more than 71 percent of

the operator respondents routinely conducted soil tests, only 36 percent tested the forage they produced with regard to quality.

Reproduction practices found among producer respondents in the Choctaw - Pushmataha area revealed over 55 percent of the producers indicated that their calving seasons were 90 days or less. While more than 14 percent stated that the length of the calving season in their operations was 60 days or less. However, one-third of the operators revealed they conduct a year round calving program. Slightly over 33 percent stated they fertility tested the sires used in their operations, while 23 pregnancy tested their cow herds.

Herd improvement practices revealed that slightly over 47 percent of the producer respondents kept individual cow records, while less than 36 percent used performance tested sires.

Nutritional and feeding practices found among producer respondents in the Choctaw - Pushmataha County area indicated slightly over 32 percent utilized native range as their primary forage source, while over 97 percent indicated a combination of bermuda grass and/or bahia or dallisgrass was their major forage sources. Slightly less than 41 percent chose to use fescue in their forage operations, while approximately 36 percent used legumes as major forage source. Furthermore, it was interesting to note that less

than four percent utilized wheat pasture in their forage operations as a primary source.

Types of grazing schemes practiced among the producers in the two-county area revealed that almost 53 percent practiced some kind of rotational grazing. However, over 37 percent indicated they used the same pasture on a continuing basis and 10 percent were involved in seasonal grazing practice.

Types of protein supplements used by the respondents revealed over 57 percent were using natural protein pellets, while no one admitted to using urea based pellets. However, less than eight percent of the producer - respondents in the two counties stated they were using liquid feeds with a molasses-urea blend, while slightly less than four percent fed alfalfa hay and over 36 percent revealed they fed something other than the indicated types of protein supplement.

Quality of protein supplements used by producer - respondents revealed that over 62 percent perceived that they used a "high" protein supplement with regard to quality, while slightly more than 26 percent stated using a "medium" quality protein supplement and 25 percent perceived they used "high quality" hay.

Acquisition practices among the producer - respondents in the two-county area reflected that over two-thirds of the

cattle operations purchased "feedstuffs" from their local feed suppliers.

Objective Three: Technical Information Preferences

The preferred method for receiving technical information among beef producer respondents in Choctaw and Pushmataha Counties indicated overwhelmingly, 72 percent, the preference was through the use of an Extension Newsletter. This preference was followed by personal contact by the extension agent with 40 percent indicating this was their preferred method to receive technical information. Thirty-nine percent of beef producer respondents preferred producer meetings, while 50 percent indicated a preference for on-farm demonstrations and beef cattle tours.

Regarding the most reliable sources of technical information having a significant influence on beef cattle operations, 55 percent of beef producer respondents indicated the OSU Extension Service as the number one and most reliable source of technical information. Slightly less than one third of the beef producer respondents reported their veterinarian as a reliable source of technical information. A small percentage included dealer

representatives, friends and neighbors, the media and "other" as reliable sources of information.

Objective Four: Major limiting factors

The major limiting factors as perceived by beef producer respondents in Choctaw and Pushmataha Counties conclusively reported financial resources and limited acres available as the number one and two limiting factors respectively. Fifty-two percent indicated financial resources were the major limiting factor while, one third, (31%), of the beef producer respondents indicated limited acres available as the major limiting factors.

Nearly all, of the beef producer respondents (95%) in Choctaw and Pushmataha Counties reported they would be receptive to using proven beef production practices if technical advice was available to fit their operations.

Conclusions

The following conclusions were based on the major findings and interpretation of the data.

- 1) The producer - respondents in this study were middle aged and over males, who were high school graduates, and had over 20 years experience in the beef industry.

2) It was apparent producer respondents in this study practiced routine vaccinations, brucellosis calfhood vaccinations for replacement heifers and routine parasite controls. Producers also castrated the male calves born in their herds, but did not seem to perceive that growth implants were important. Although it was rather obvious beef producer respondents utilized soil testing as a management practice, while forage testing concerning quality was apparently not important. Therefore, leading the author to believe that the producers were primarily concerned with the quantity of forage produced.

3) It was apparent that the length of calving season reported by the respondents indicated considerable variation in practice. Furthermore, it was evident that producer respondents don't see the importance of using fertility tested bulls or pregnancy testing their cows. However, as indicated in conclusion number two, it was rather obvious that castration, vaccination programs, were routinely practiced by the study respondents, while the need to keep individual cow records and use of performance tested bulls was not evident to individual producers.

4) It was readily apparent that high protein supplements were considered important to the producer respondents, in winter feeding. Furthermore, feed supplements were for the most part purchased locally.

5) Beef producer respondents in this study have high regard for the OSU Extension Service and indicated preference toward receiving Extension in technical information through Extension Newsletters. In addition, the respondents ranked the OSU Extension Service as the most reliable source of technical information.

6) Beef producer respondents indicated the major limiting factors in their beef operations were financial resources and limited acres available to increase production.

7) Support for the Extension Service was readily apparent, with nearly all of respondents indicating they would be receptive to using proven beef production practices.

Recommendations

The recommendations that follow are provided to assist users of this study in making educational program planning decisions with regard to the dissemination of information in the realm of beef production practices.

1. Beef producers in the Choctaw and Pushmataha Counties are receptive to the use of, and recommendation of beef production practices by the OSU Extension Service. Extension programming should focus on educational programs which will build on an already solid foundation of beef production operations in this two-county area.

2. Extension programming should be presented in a manner which beef producer respondents feel most comfortable in receiving information: Primarily Newsletters, personal contact with Extension Agent, with a combination of tours, on-farm demonstrations and producer meetings.

3. Extension programming should continue to emphasize the financial and economical aspects of the beef industry in an effort to educate producers of the importance of economics in making decisions about their beef operations.

Implications

The findings of this study indicate that a majority of the beef producer respondents were aware of and consider the OSU Extension Service a reliable and important resource of information. However, many of the recommendations of the Extension Service for years are still not currently utilized by a majority of the beef producer respondents. However, this research effort indicates that further programming efforts should be made to strengthen production and economic practices among beef production in the two-county area.

Although the Extension Service cannot be expected to correct the deficiencies in every beef operation, and cannot be held accountable for every beef operation, a continued effort must be made. Increasing awareness among beef producers provides the opportunity to emphasize producer

profitability and improve production practices which are economically important.

Further study of this subject is needed in an effort to "zero in" on what and how to effectively assist beef producers in increasing profitability. Hopefully, this study will spawn further studies and reach beyond the two-counties of Choctaw and Pushmataha in southeast Oklahoma.

A SELECTED BIBLIOGRAPHY

- Anderson, Clinton P. Grasses Yearbook of Agriculture 1948, United States Department Of Agriculture, p.18
- Anderson, S., Bidwell, T.G., Rommann, L. Introduction To Agroforestry Alternatives, OSU Fact Sheet #5033.
- Bellinghausen, B., State Statistician, Oklahoma Agricultural Statistics (1991).
- Bliss, T.J. (1991). Satellite Video Cattle Auctions, (OSU Fact Sheet # 463).
- Dalrymple, R.L. Proceedings Of A Forage Legume Conference, 1977.
- Denman, C.E., Huffine, W., Arnold, J.D. Bermudagrass Forage Production Studies in Oklahoma. Bulletin B-692 April 1971.
- Hurt, C., Harrell, V., Kirby, D. Are Your Farmers Confused About Marketing, Journal of Extension, Winter 83.
- Jobes, R.A. The Cow/Calf Industry in Oklahoma in Perspective, OSU Current Report # 491.
- Johnson, G., and Rommann, L., Available Nitrogen: Bermudagrass and Other Forages. Fact Sheet No. 2235. (1983).
- Key, J. P., AGED 5980 Research Design. Stillwater, OK: Oklahoma State University, 1992.
- Kincannon, C.L., Deputy Director, Oklahoma Census of Agriculture. (1987).
- Lusby, K. Principles of Feeding The Cowherd, Advanced Cow/Calf Clinic Proceedings 1990, p. 3.
- Lusby, K., and Buchanan, D., Cow/Calf Index II. (1991).
- MCPeak, C.A. (1986) Suggested Identification Methods For Cattle, (OSU Fact Sheet # 3270).
- Monroe, W.E., Pastures Pay With Bahiagrass, Jan. 1967.

- Rice, L.E. Determining Breeding Soundness of Bulls,
Advanced Cow/Calf Clinic Proceedings 1990, p. 38.
- Rommann, Loren. (1992) Protein - Nitrogen Relationships In Forages. (OSU Fact Sheet # 2568).
- Rommann, L.M., Taliaferro, C.M., McMurphy, W.E.
Bermudagrass Varieties For Oklahoma. Fact Sheet #2583
Feb. 1991.
- Rossing, Boyd, Beef Cattle Production Practices, Journal
of Extension, May/June 1984.
- SAS USERS'S GUIDE: BASICS. (1982). Cary, NC: SAS Institute,
Inc.
- Smith, S.C., Kelley, J.W. The Effect of Mid-Summer Deworming on Weight Gain of Cows and Their Calves in Southeast Oklahoma, OSU Animal Science Research Report June 91, MP 134. p. 202.
- Sofranko, A.J., Khan, A. It's Not That Simple, Journal
of Extension, Winter 88.
- Soil Survey Of Choctaw County Oklahoma, United States
Department Of Agriculture, Soil Conservation Service.
- Soil Survey of Pushmataha County Oklahoma, United States
Department Of Agriculture, Soil Conservation Service.
- Toensmeyer, U.C., German, C.L. Marketing For Small Farmers - A Question of Limited Alternatives, Research
For Small Farmers Proceedings of The Special Symposium.
p. 241.
- Wettemann, R.P., Lusby, K.S. Body Condition At Calving, Calf Survival and Reproductive Performance of First Calf Heifers, OSU Animal Science Research Report May 87, Mp 119. p. 73-74.

APPENDICES

APPENDIX A
INTERNAL REVIEW BOARD APPROVAL

**OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW**

Date: 01-20-97

IRB#: AG-97-011

Proposal Title: THE ADOPTION OF CONTEMPORARY BEEF
PRODUCTION PRACTICES BY EXTENSION CLIENTELE IN A TWO-
COUNTY AREA OF SOUTHEAST OKLAHOMA

Principal Investigator(s): James D. White, Marty Montague

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

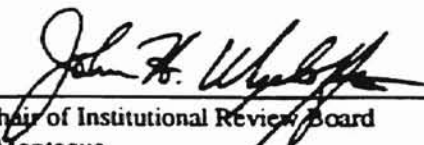
ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD
AT NEXT MEETING, AS WELL AS ARE SUBJECT TO MONITORING AT ANY TIME DURING
THE APPROVAL PERIOD.

APPROVAL STATUS PERIOD VALID FOR DATA COLLECTION FOR A ONE CALENDAR YEAR
PERIOD AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE
SUBMITTED FOR BOARD APPROVAL.

ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR
APPROVAL.

Comments, Modifications/Conditions for Approval or Disapproval are as follows:

Signature:


Chair of Institutional Review Board

cc: Marty Montague

Date: January 21, 1997

APPENDIX B
COVER LETTER



Office of the Dean and Director • 139 Agricultural Hall
Stillwater, Oklahoma 74078-6019 • (405) 744-5398 • Fax (405) 744-5339

January 8, 1997

NAME
ADDRESS

Dear NAME:

I am currently working on a Master's Degree in Agricultural Education at Oklahoma State University. The research for my thesis is centered around beef producers' perceptions and practices implemented with regard to beef production in Choctaw and Pushmataha Counties. Dr. James White, Agricultural Education Department, is advising the study. Dr. Steven Smith, Extension Livestock Specialists is also working with me on the study. This topic was chosen because of my interest in beef production, and beef production practices implemented by beef producers in these two counties. Also, I feel the information gained from this study will be beneficial to the beef producers of this state.

The population of the study will include the beef producers currently listed on the beef producer mailing list located at the Oklahoma Cooperative Extension office in Hugo, Oklahoma.

Enclosed please find the producer survey. This survey instrument will be used solely to gather information from the population for the purpose of this study. Please complete the survey to the best of your knowledge as it applies to your operation, and return it in the next seven days in the addressed, pre-stamped envelope provided for you. The information provided by you will be reported in the aggregate only and your personal information will remain strictly confidential.

Your participation in this effort is greatly appreciated, if you have questions feel free to contact either myself (326-3359) or (587-2519) or Dr. White (405 744-5130) for further information.

Sincerely,

Marty Montague
Graduate Student

Dr. Steve Smith
Extension Livestock Specialist

Dr. James White
Chairman, Graduate Committee

APPENDIX C
INSTRUMENT

I. Producer Characteristics:

1. Gender

☐ Female ☐ Male

2. Age:

☐ 25 years of age or less
☐ 26-35
☐ 36-45
☐ 46-55
☐ 56-65
☐ 66-75
☐ 76 years or over

3. Highest level of formal education:

☐ Highest grade completed _____
☐ High School Graduate
☐ Some College Work
☐ Junior College Graduate
☐ B.S. Degree
☐ Other (Please Specify) _____

4. Years of Beef Production Experience:

☐ Five years of experience or less
☐ 6-10
☐ 11-15
☐ 16-20
☐ 21-25
☐ 26-30
☐ 31-35
☐ 36-40
☐ 41 years or more

5. Status of Operation:

☐ Full-time Operator
☐ Part-time Operator

6. Type of Beef Cattle Operation:

☐ Cow-Calf
☐ Stocker
☐ Purebred
☐ Combination of Cow-Calf and Stockers
☐ Combination of Cow-Calf, stocker & purebred operation
☐ Combination of stockers & purebred operation

___ Other (please be specific)

7. Size of operation (cow-calf):

- ___ 25 head of females in production or less
- ___ 26-50
- ___ 51-75
- ___ 76-100
- ___ 101-150
- ___ 151-200
- ___ 201-250
- ___ 251-300
- ___ 301 head of production females or more

8. Size of operation (stockers):

- ___ 50 head or less
- ___ 51-100
- ___ 101-150
- ___ 151-200
- ___ 201-300
- ___ 301-400
- ___ 401-500
- ___ 501-750
- ___ 751-1000
- ___ 1000 head or more

9. Size of operation (Purebred):

- ___ 50 head of females in production or less
- ___ 51-100
- ___ 101-150
- ___ 151-200
- ___ 201-250
- ___ 251 head of females in production or more

10. Marketing options utilized in your operation:
(check more than one)

- ___ local community auction (Hugo, Antlers)
- ___ area stockyards (Paris, Ada, McAlester)
- ___ Oklahoma National Stockyards (commission company)
- ___ Direct to stocker operators
- ___ Direct to feedlot operators
- ___ other (please be specific) _____
(i.e. forward contracts, hedging, etc.)

II. Selected practices currently used in operation:

1. Herd Health:

- a. vaccination schedule:
 - ☐ yes ☐ no
 - b. replacement heifer calfhooed vaccination for brucellosis:
 - ☐ yes ☐ no
 - c. routine parasite control:
 - ☐ yes ☐ no
2. Management practices used in your operation:
- a. castration of bull calves:
 - ☐ yes ☐ no
 - b. use growth stimulants (implants) in your operation:
 - ☐ yes ☐ no
 - c. soil testing: ☐ yes ☐ no
 - d. forage testing: ☐ yes ☐ no
3. Reproduction practices:
- a. Length of calving season frequently used in your operation:
 - ☐ < 60 days
 - ☐ 60-90
 - ☐ 90-120
 - ☐ 120 + (year round)
 - b. Bulls are fertility tested prior to breeding season:
 - ☐ yes ☐ no
 - c. Cows are pregnancy tested during second trimester:
 - ☐ yes ☐ no
4. Herd improvement practices:
- a. Individual cow records are kept:
 - ☐ yes ☐ no
 - b. Performance tested sires are used:
 - ☐ yes ☐ no
5. Nutritional practices:
- a. Primary source of forage/pasture: (check more than one)
 - ☐ native range (bluestem, Indiangrass, switchgrass, etc.)
 - ☐ Bermudagrass and/or Bahia
 - ☐ Fescue
 - ☐ Wheat pasture
 - ☐ Legumes
 - ☐ other (Please specify) _____
 - b. Primary grazing scheme:
 - ☐ Rotational grazing
 - ☐ Season grazing
 - ☐ Continual grazing
 - ☐ Intensive grazing
 - c. Type of protein supplements fed during winter to cow herd:
 - ☐ Natural protein pellets (20's & 40's)
 - ☐ Urea based pellets
 - ☐ Liquid (molasses/urea blend) feed
 - ☐ Alfalfa hay

- _____ other (please specify) _____
- d. Protein source:
- _____ High protein (cottonseed, soybean, peanut, alfalfa base)
 - _____ Medium protein (16 - 24%)
 - _____ Low protein (12 -14%)
 - _____ High quality hay
 - _____ Urea
 - _____ other (please specify) _____
6. Extension Education services:
- a. Preference for receiving technical information concerning your beef cattle operation:
- _____ Extension Newsletter
 - _____ Extension Newspaper article
 - _____ Personal contact from Extension Agent (phone, office, farm)
 - _____ Producer meetings
 - _____ Tour of area cattle operations
 - _____ On-farm demonstrations
 - _____ other (please specify) _____
7. Source of most technical information concerning your beef cattle operation:
- _____ OSU Extension Service
 - _____ Dealer representatives (feed, seed, fertilizer)
 - _____ Friends/neighbors
 - _____ Media
 - _____ Veterinarian
 - _____ Other (please specify) _____
8. Major limiting factors impacting your operation:
- _____ small herd size
 - _____ limited acres available
 - _____ working facilities
 - _____ labor
 - _____ technical advice
 - _____ limited feed storage
 - _____ financial resources
 - _____ other (please specify) _____
9. If technical advice was available to fit your operation would you be receptive to adopting proven beef production practices concerning herd health, nutrition, forage production, herd management, and other selected beef production practices?
- _____ yes _____ no

2
VITA

MARTY MONTAGUE

Candidate for the Degree of
Master of Science

Thesis: AN ASSESSMENT OF BEEF PRODUCTION PRACTICES UTILIZED
BY SELECTED EXTENSION CLIENTELE IN CHOCTAW AND
PUSHMATAHA COUNTIES OF OKLAHOMA

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Coffeyville, Kansas, on
November 2, 1960, the son of Bob and Ramona
Montague. Married, wife Teresa, Children
Mandy Jo and Matthew David.

Education: Graduated from Lenapah High School,
Lenapah, Oklahoma in May 1978; received Bachelor of
Science degree in Agricultural Education from
Oklahoma State University, Stillwater, Oklahoma in
May 1982. Completed the requirements for the
Master of Science degree with a major in
Agricultural Education at Oklahoma State University
in August 1997.

Professional Experience: Agricultural Education
instructor, Rattan High School, Rattan, Oklahoma,
1982 to 1989. Agriculture agent, Oklahoma
Cooperative Extension Service, 1989 to present.