# POTENTIAL ADJUSTMENTS OF BEEF CATTLE ENTERPEISES

## IN CHOCTAM COUNTY, OKLAHOMA

By PAUL WAYNE ECONER Bachelor of Science Oklahoma State University Stillwater, Oklahoma 1949

Submitted to the faculty of the Graduate School of the Oklahoma State University in partial fulfillment of the requirements for the degree of MASTER OF SCIENCE August, 1961 POTENTIAL ADJUSTMENTS OF BEEF CATTLE ENTERPRISES

IN CHOCTAW COUNTY, OKLAHOMA

Report Approved:

Report Advisor 21

Dean of the Graduate School

#### PREFACE

The major objective of this report is to determine if and how the beef cow and calf producers in Choctaw County, Oklahoma, could adjust their operations for greater economic returns.

A survey was taken of the characteristic management practices of twenty cow and calf beef producers in the county. Results of this survey indicate that many different management practices can be adjusted for greater economic returns.

Examples are given of possible increased potentials by adjusting present pasture management and feeding practices.

The author is grateful to Dr. W. B. Back, Report Advisor, for his indulgent and understanding assistance during the research and preparation of this report.

Special appreciation is also extended to Dr. D. E. Howell, Major Advisor, for his valuable guidance throughout my graduate study.

Indebtedness is acknowledged to Drs. Robert Totusek and James S. Plaxico for their guidance and for the loan of material used in this study; and to the following for their helpful suggestions and constructive criticism: Cecil Maynard, Oklahoma State University Extension Service; Daniel F. Morton, Assistant County Agent, Choctaw County.

Further appreciation is extended to Mrs. Joan Frost and Mrs. Frances Branton for their assistance with rough draft typing, and a special acknowledgment to Mrs. Ann Lake for her excellent cooperation in typing the final manuscript.

iii

# TABLE OF CONTENTS

Chapte	er F	'age
I.	INTRODUCTION	1
,	Purpose of the Study	1 1 2
II.	METHODS AND PROCEDURES	4
	Selection of Respondents	4 4 5
III.	PRESENTATION OF SURVEY DATA	6
	Beef Cattle Inventory	6 8 10 11 15 19 23 24
IV.	POTENTIAL OF SELECTED KINDS OF ADJUSTMENTS	29
	Pasture Development	29 <b>35</b>
v.	SUMMARY AND CONCLUSIONS	44
BIBLIO	остарну	47
APPEND	DIX	48

# LIST OF TABLES

Table		Page
I.	Inventory of Ecef Cattle on the Farm as of January 1, 1961, by Size of Cow Herd and by Class of Cattle	6
11.	Per Cent of Registered Cattle by Class of Cattle and Size of Cow Herd	7
III.	Land Resources by Tenure and Kind of Land Operated and by Size of Cow Herd, Twenty Beef Producers in Choctaw County	Ś
IV.	Capital Investment by Size of Cow Herd, Twenty Beef Pro- ducers in Choctaw County	10
v.	Summary of Land Use by Size of Cow Herd	11
VI.	Pasture Type and Production by Length of Grazing Season, Rate per Acre, and Size of Cow Herd	13
VII.	Number of 10-Hour Days of Labor Required for Preesent Practices and Size of Operations, by Size of Cow Herd	20
VIII.	Hours of Labor Required by Months and Fer Cow for Present Practices and by Size of Cow Herd	22
IX.	Marketing Practices by Size of Cow Herd of Twenty Beef Producers in Choctaw County	23
X.	Information Given by Twenty Beef Producers as to Total Acres, Length of Grazing Season, Rate per Acre and Po- tentials for Different Type Pastures	31
XI.	Estimated Increased Income Potential by Developing Unim- proved Pastures, Average Evalgement Practices and Dif- ferent Size of Cow Herds	32
XII.	Summary of Increased Income Potential by Developing Unim- proved Pastures, Average Management and Four Herd Size Groups	34
XIII.	Feeding Program for Twenty Heifers as Reported by One Respondent in Choctaw County	38
XIV.	Proposed Feeding Program for Heifers	41

### CHAPTER I

#### INTRODUCTION

#### Purpose of the Study

The major purpose of this study was to determine whether and how additional financial returns can be obtained by cow and calf producers in Choctaw County, Oklahoma.

In accomplishing this aim, it was deemed necessary to obtain information from producers in the county on such items as cattle inventory, per cent of the cattle registered, types of pasture available and their carrying capacities, present storage and feeding facilities, amount of labor used for different size herds, the usual feeding practices, and the usual marketing program.

Information obtained by the survey was used in identifying needed adjustments in cow and calf programs in the county and in economic potential for pasture and feeding adjustments. The findings were expected to be applicable to similar beef programs in other counties of southeastern Oklahoma.

### Need for the Study

In observing the usual management practices carried on by cow and calf producers in Choctaw County, indications were that profitable adjustments could be made. It appeared there was a need for more factual

information concerning the production of stocker and feeder calves versus fat slaughter calves or baby beeves. Also possibilities of increasing economic returns through improved management practices in pasture production and utilization appeared possible.

In this area with over 44 inches annual rainfall, yields above the average for the state in both pastures and hay crops can be obtained without the additional cost of irrigation.

A large number of feeder calf producers indicated to the writer that they believed the buyers of their light-weight calves were obtaining high profit on them or they would not continue the practice. They also felt that they did not know exactly what to do about it.

More farmers in Choctaw County operate beef cattle than any other enterprise. Returns from beef production constitute the major agricultural income. This importance of the beef enterprise to a large number of farmers in the county adds to the value of this study.

### Use of Information Obtained

The information and observations in this survey will be useful in helping the cow and calf producers adjust their programs toward greater economic returns. Demonstrations of improved practices by the better producers in different areas and various herd sizes will, perhaps, give the greatest educational returns.

The recommended improved management practices, as determined through this study, could also be helpful to county extension workers, bankers and other lending agencies, feed dealers, vocational agriculture instructors, and all other persons serving the cattlemen.

The findings from this survey could be used in educational programs throughout areas where they are applicable. With the media of radio, television, newspapers, and educational meetings concerning beef cattle management and pasture values, the findings and recommendations could be made available to more beef cattle producers which should bring about increased knowledge to be used in adjusting their individual programs.

## CHAPTER II

#### METHODS AND PROCEDURES

### Selection of Respondents

In order to get a good cross-section representation of beef producers in the county, those in the sample were selected to represent (1) different areas of the county and (2) different size herds.

In compiling a list of producers to be sampled, assistance was received from the local veterinarian, sale barn manager, Farmers Home Administration supervisor, bankers, and leading cattlemen of the county.

#### Development of Questionnaire

The initial questionnaire form was developed with the assistance of staff members of the Department of Agricultural Economics, Oklahoma State University. A "pre-test" of the questionnaire was performed by interview of two operators, and the final questionnaire was developed by use of information obtained by the experience (Appendix).

### Survey Procedure

In addition to the two operators interviewed in the pre-test, the survey included eighteen producers with different herd sizes. The survey was completed during the spring of 1961.

#### Method of Presenting the Data

Upon completion of the survey, the questionnaires were divided into four groups by size of cow herd as follows:

Group	Average Number of Cows
35 am under	28.4
36 to 50	42.0
51 to 125	68.6
125 and over	226.5

There were five producers per group.

Information and comparisons throughout the report will be made on the five farms in each group. As an example, when only one respondent in a particular group owns 40 acres of bottom land, it will be shown as bottom land 8 ac (1). The 8 acres is the average acres of bottom land owned by the five respondents reporting bottom land owned. Where all five respondents are represented in an average, no number in parentheses will follow. Both the range and the average size of cow herd will be shown in the tables.

An inventory of all cattle on hand January 1, 1961, was obtained from each producer, and this information was compiled and presented as Table I of this report.

Information on various operations obtained through the questionnaires has been compiled and is presented in table and discussion form. Some categories have been averaged in percentages. Results of opinion questions asked the producers have been summarized and discussed in the section to which they relate.

#### CHAPTER III

#### PRESENTATION OF SURVEY DATA

### Beef Cattle Inventory

Average cow herd size of the beef producers surveyed in this study ranged from 28.4 for the smallest to 226.5 for the largest (Table I), The few yearling steers carried through the winter are mostly handled by the large operators. Also, large operators have cows that calve more/in the fall as indicated by a 57 per cent calf crop as of January 1.

### TABLE I

INVENTORY OF BEEF CATTLE ON THE FARM AS OF JANUARY 1, 1961 BY SIZE OF CON HERD AND BY CLASS OF CATTLE

Size of Cow Herd										
35 & Under (28.4)	36 to 50 (42)	51 to 125 (68.6)	125 & Over (226.5)							
26.4	42	68.6	226.5							
1.2 (2)	2.0 (2)	11.4 (4)	19.4 (3.							
.6 (1)	4.6 (2)	3.0 (2)	18.6 (3							
0.0	1.0 (1)	0.0	21.4 (3)							
10.4	9.2 (4)	18.0 (4)	130.0							
1.0	1.8	3.0	9.0							
28.4	23.3	22.9	25.2							
36	21	26	57							
5	15	20	16							
	35 & Under (28.4) 28.4 1.2 (2) .6 (1) 0.0 10.4 1.0 28.4 36 5	Size of $35 \&$ Under $36 \text{ to } 50$ $(28.4)$ $(42)$ $26.4$ $42$ $1.2 (2)$ $2.0 (2)$ $.6 (1)$ $4.6 (2)$ $0.0$ $1.0 (1)$ $10.4$ $9.2 (4)$ $1.0$ $1.8$ $28.4$ $23.3$ $36$ $21$ $5$ $15$	Size of Cow Herd $35 \& Under36 to 5051 to 125(28.4)(42)(68.6)26.44268.61.2 (2)2.0 (2)11.4 (4).6 (1)4.6 (2)3.0 (2)0.01.0 (1)0.010.49.2 (4)18.0 (4)1.01.83.028.423.322.936212651520$							

Number of cows per bull varies little between different size operators. Small operators save fewer replacement heights. This indicates they purchase more of their replacements.

#### TABLE II

an disang menganakan kang kang kang kang kang kang k	Size of Cow Herd								
Class of Cattle	35 & Under (28.4)	36 to 50 (42)	51 to 125 (68.6)	125 & Over (226.5)					
Сома	25	12	.8	10					
Heifers	11	10	1.0	13					
Calves	17	32	2.0	8					
Bulls	100	77	73.0	100					

## PER CENT OF REGISTERED CATTLE BY CLASS OF CATTLE AND SIZE OF CON HERD

The smaller operators own a higher per cent of registered cows (Table II). They also had more money invested per cow. The producers with 51 to 125 cows owned the poorest quality cattle and they seemed to consider quality less important than the other producers as evidenced by their low percentage of registered breeding stock.

The majority of all operators used registered bulls and commercial cows in their operations. The producers with 126 or more cows had 100 per cent of their bulls registered and only 10 per cent of their cows were registered. These producers tend to handle most of their registered cattle similar to their commercial cattle with only the best being maintained as breeding replacements for the commercial herd.

## Land Resources Inventory

Acreages of the total land resources operated by kind of land and tenure are given in Table III.

### TABLE III

## LAND RESOURCES BY TENURE AND KIND OF LAND OPERATED AND BY SIZE OF COW HERD, TWENTY BEEF PRODUCERS IN CHOCTAW COUNTY

	Size of Cow Herd									
Land Resources	35 & Under (28.4)	36 to 50 53 (42)	(68.6)	125 & Over (226.5)						
Total Acres Operated	303	400	949	2001						
Owned	182 (4)	364	692 (4)	1703						
Rented	121 (3)	36 (1)	257 (2)	298 (1)						
Acres by Kind of Land Operated	the first dealers and the second se	a san Canalas an								
Bottom Land	12 (1)	62 (4)	238 (3)	836 (4)						
Good Uplanda/	146 (4)	192	350	899 (3)						
Poor Uplandb/	80 (4)	72 (3)	222 (4)	8 (1)						
Other <sup>c</sup> /	65	74	139	258						
Acres of land Operated per Cow	10.6	9.5	13.8	8.8						

a/ Good upland was the more fertile, less steep, open acreage.

b/ Poor upland was the shallow, less productive, open acreage.2

c/ Other includes wasteland, woodland, conservation reserve land, and farmstead.

W. B. Back and Verner B. Hurt, <u>Potential for Agricultural Adjustment</u> and <u>Development in the Ouachita Highlands of Oklahoma</u>, Oklahoma Agricultural Experiment Station Bulletin B-582 (in process of publication, 1961). In the group with 35 or less cows, one respondent operated entirely on rented land which greatly affected the group proportion of rented to total acres. In the other groups, only 4 of 15 operators rented land and the proportion rented was much lower. The producers who owned a higher per cent of their land usually owned more bottom and good upland. This fact was clearly shown by the fewer acres of land operated per cow by these producers.

The group with 51 to 125 cows operated 13.8 acres per cow. This probably indicated that a larger per cent of their acres were less productive than those in the other groups. The proportion of bottom to total land increased from the small to the large size of operations. Usually, rented land was lower in quality than owned land.

### Inventory of Feeding and Storage Facilities

All four groups had adequate hay storage facilities for present operations and had potential for some expansion. In general, facilities for grain storage are adequate only for present operations. Mine of the ten larger operations had grain storage facilities, but only six of the ten smaller operations had facilities for storage of grain. Only one of the twenty respondents had silage storage facilities, and they were unused.

Only one farmer had complete facilities available for feed lot operation. Four others had fattened calves beyond creep feeding in the past, but their facilities were temporary and no longer usable. Creep feeding facilities were available to sixteen of the respondents.

## Capital Investment

Capital investment information shows that larger cow herds tend to have less invested per cow unit (Table IV). In the group with less than 36 ccws, two respondents had less than 10 thousand dollars invested. These were predominantly operators of rented land. Less money was invested in machinery and more in cattle by this group. Froducers with 36 to 50 cows seemed to have very close to the same amount invested. Each owned the majority of his land. Machinery investment for the group was very low.

### TABLE IV

ere zanimente anderen en e	na an a	Size	e of Cow Hero	ì	
Collars	35 & Under (28.4)	36 to 50 (42)	51 to 125 (68.6)	125 & Over (226.5)	Total
0 to 10	2	0	0	0	2
10 to 50	3	5	2	0	10
50 to 100	0	0	2	i.	3
100 & Over	0	0	Ĩ	4	5

# CAPITAL INVESTMENT<sup>2</sup>/BY SIZE OF CON MERD, TWENTY BEEF PRODUCERS IN CHOCTAW COUNTY

a/ Includes land, buildings, livestock, and machinery owned. (Does not include rented land.)

The group with 51 to 125 cows varied considerably in their total investments. Of the two respondents with lower investments (10 to 50 thousand dollars), one operated rented land while the other owned mostly poor upland. The one respondent with over 100 thousand dollars invested owned 2100 acres, and he was in the process of enlarging his herd extensively. One respondent in the group with 126 or more cows was in the 50 to 100 thousand investment category. This rather small investment for the large size of herd was caused by his operating a relatively large portion of rented land.

#### Land Use

The summary of land use indicated some of the producers with 50 or less cows did not have cropland or hay meadows.

### TABLE V

	Size of Cow Herd										
Land Use	35 & Under (28.4)	36 to 50 (42)	51 to 125 (68.6)	126 & Over (126.5)							
Cropland	10 (2)	4 (1)	130	302 (4)							
Pasture Improved	94 (4)	84 (4)	158 (4)	753							
Pasture, Unimproved	122	199	325 (4)	519 (3)							
Pasture, Noods		32 (2)	180 (2)								
Meadows, Native	12 (3)	7 (2)	17 (2)	169 (2)							
Wasteland	3 (3)	10	21	18 (2)							
Woodland	57	44 (2)	108	188 (4)							
Farmstead	5	2	10	20							
Conservation Reserve		18 (1)		32 (1)							
TOTAL	303	400	949	2001							

SUMMARY OF LAND USE BY SIZE OF COM HERD

The 10 producers in the two smaller groups had only 33 acres for grain and hay production, or 3.3 acres per farm. The two groups had 178 acres of improved pasture, or 17.8 acres per farm. These facts emphasize the limitations of enlarging or improving on any existing feeding programs until adjustments in grain, roughage, and pasture production can be made.

respondants

All'in the group with 51 to 125 cows had cropland, and it averaged 130 acres per farm. Only 158 of 483 acres of their pasture land, or 23 per cent, were improved. With most of their crops sold for cash and 77 per cent of their pastures unimproved, adjustments in their pasture and grain production and feeding programs could be made. Also, this group had considerable acreages of wasteland (21 acres per farm) and woodland (108 acres per farm) which may add to their economic potential for land use adjustments.

The group with 126 or more cows had four operators with cropland and two with large acreages of native meadow. Both land uses total 471 acres which is over two acres per cow. This group had 753 acres of improved pasture, or over three acres per cow. This group was doing a much better job of land use management.

Information on acreages of pasture by type, length of grazing season, and carrying capacities for the different groups is presented in Table VI. The acres in each type of pasture represent the total acres reported by all the respondents in each group.

The rate of six acres per cow on bottom land pasture in the group with less than 36 cows seems out of line with rates reported by other groups. This was caused by some pasture belonging to this group being moved and harvested for hay once during the lush growing season.

# TABLE VI

is to a second start of the second start of the second start of the second start start as the second start of t		in a star in the star of th	nilling in al and state of the definition of the	S	ize of C	ow Herd	****	<b>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</b>	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	na an a
Pasture Type	35 & Unde (28.4)	r	36 (i	10 50 12)	nar de anti-anti-anti-anti-anti-anti-anti-anti-	91 E (6)	5 125 3.6)		126 & (22	Over 6.5)
	Acresb/ Mos.	RateC/ Per Acre	Acres	Mos.	Rate Per Acre	Acros	Mos.	Rate Per Acre	Acres 1	os. Rate Per Acre
Eotton Land Improved	40 (1) 7.0	6.0	290 (L)	8.2	2.3	250 (2)	9.0	2.0	1789 (3)	7.6 2.2
Unimproved						220 (1)	7.0	5.0	1055 (2)	7.3 4.8
Upland - Good Improved	370 (3) 8.0	3.1	130 (1)	7.0	5.0	520 (4)	រ ចំ.)ស្តេ ្	2.8	1985 (2)	8.0 4.2
Unisproved	190 (3) 6.6	4.1	600 (4)	7.0	5.4	660 (3)	÷.3	5.5	1540 (2)	8.0 8.7
Opland - Poor Improved	100 (1) 8.5	3.0				30 (1)	7.0	3.0		
Unimproved	445 (4) 5.9	6.7	395 (3)	5.7	6.6	855 (4)	6.7	9.8		i i
Good Fasture Unimproved			160 (1)	2.6	5.0	900 (2)	7.2	20.0		÷ .
TOTAL PASTURE	6.0		7.5			10.0			5.6	

PASTURE TYPE AND PRODUCTION BY LEMOTH OF GRAZING SEASON, BATE FUR ACRES, AND SIZE OF CON HERD

a/ Pate per acre refers to the number of acres required to carry one sature animal for months indicated on table.

b/ Fortions of this pasture were also used as hay crops.

c/ Estimates on carrying capacity of this group appeared to be high compared to estimates made by many farmers.

The 8.0 acres of all type pastures per cow was rather high and secned to be caused by more poor upland being in pastures and less than one acre of improved pasture per cow.

In the group with the herd size of 36 to 50 cows, only 420 of 1575 acres (26 per cent) of their pastures were improved. With most of their improved acres in the bottom, the total pasture per cow was 7.5 acres.

The group with 51 to 125 cows had the least amount of improved pasture (790 of 3440 total acres, or 23 per cent). This group also had a total of 900 acres in woods pasture with very low carrying capacity. The woods pasture and poor upland made up 51 per cent of this group's available pasture, and large amounts of these pasture types undoubtedly accounted for the rather large amount of pasture per cow (10 acres).

In the group with 126 or more cows, 3765 of 6360 acres (or 59 per cent) of their pasture was improved. Forty-five per cent or 2735 acres was bottom land and 55 per cent, or 3525 acres, was good upland. No poor upland or woods pasture was present for this group. These figures show rather clearly that the operators in this group do have better land available for their beef cattle programs than do operators in the other groups. Only 5.6 acres of pasture was needed per 50. For this group.

There seemed to be very little difference in length of grazing among the four groups. Mere cattle were held on the same pastures year-round, longer grazing periods were indicated. However, in most of these cases the carrying capacity was lower.

Considerable space in the questionnaire was allotted for obtaining information on crop acreages and production; however, only a limited amount of information on these items was obtained from the producers.

 $\mathcal{U}_{i}$ 

In the groups with less than 36 and 36 to 50 cows, there was no grain, forage sorghum, or alfalfa hay crops shown as produced. Only one respondent of each group produced native grass hay. In the group with less than 36 cows, two indicated production of legume hay and four indicated production of other grass hay. In the group with 36 to 50 cows, two indicated production of other grass hay. Of the ten respondents in these two smaller size herd groups, only five raised sufficient roughage to aid in a fattening program and none raised grain although four indicated they could.

In the group with 51 to 125 cows, three producers raised some corn, but only one raised grain sorghums and forage sorghums in the past three years. Four indicated they do not raise sufficient grain to aid in fattening their calves while the other respondent only raised a portion of the amount needed. In this group, two had native meadow hay, two had alfalfa hay, three had other legume hay, and two had other grass hay. Indications are that all five of the respondents in this group raised sufficient roughage or could have it available to aid in a fattening program.

In the group with more than 125 cous, three producers had corn, three had grain sorghum, and one had small grains. When asked if they raised enough grain to fatten their calves, one answered "yes," two said "part of it" and two said "no." Three indicated they could have raised enough grain, while two said "no." Two respondents of the group had native meadow hay, three had alfalfa hay, and one had other grass hay. All five of this group felt that they were raising sufficient roughage to aid in a fattening program.

### Feeding Practices

In most beef herds in Choctaw County, winter feeding starts about December 1 and ends about April 1. During the eight months from April to December,

little feeding is practiced or needed.

Operators of different size herds varied little in their feeding programs. Producers feeding grass hay as winter roughage averaged feeding about 1800 pounds per cow. When legume hay was used in winter feeding, only about 1200 pounds per cow was fed. In most cases, bulls were fed about onefourth more roughage than was fed to cows, and yearlings were fed about onefourth less. Seventy-five per cent of the calves ate hay with the cows or received no hay. Producers with more fall calves usually provided some extra hay for the older calves in the later winter months.

All but one of the producers fed some type protein during the winter feeding program. Annual amounts of protein supplement per cow varied from 70 to 250 pounds. The larger amounts were fed by the producers feeding a cotton seed meal and salt mixture year-round. Where legume hay was used as the main source of roughage, less protein was fed. Bulls usually received more protein than did cows due to earlier feeding of them in the fall and to their more greedy eating habits when fed with the cows.

Eight producers fed 2 to 3 pounds per cow per day of a commercial grain cube containing 20 per cent protein. Four respondents raised grain and fed it to their cows. These operators usually fed 3 to 3.5 pounds per day of corncob meal or maize per cow. The other eight producers did not feed grain to their cows. Most bulls were fed from 4 to 10 pounds of grain per day for approximately 120 days. Usually the producers with more cattle fed the more liberal amounts of grain.

Seven of the producers did not feed minerals other than salt, and four of these failed to have it available at all times. The thirteen producers feeding complete minerals and salt free choice did not know the extra amounts fed, but they did feel it was important to have it available at all times.

In general, the yearlings being wintered were maintained as replacements and were fed grain and protein rations for maximum growth.

In the creep feeding operations, the two smaller size herd groups had seven producers who creep fed and three who did not. Of the ten producers with the larger size herds, four do not creep feed. Only one practices creep feeding annually, while five carry on semi-creep feeding programs or creep feed sometimes but not every year.

The producers with the smaller hords tend to follow a set management program, but the producers of larger herds adjust their programs to botter fit their feed supply and market outlook.

The twenty respondents were asked: "If you are not fattening any of your calves, why?" Reasons and the number of times indicated are as follows:<sup>3</sup>

Off-farm employment and lack of time	6
Lack of facilities	5
Lack of money and don't want to go in debt	4
Lack of home-grown grains	3
Too old	3
I plan to when I get fixed (soon)	3
Feeder calf market the past 3 years too attractive to gamble it	]

<sup>3</sup>Some respondents gave more than one reason.

In general, the smaller producers felt they needed more calves before a feeding program would pay. The larger producers felt they needed to raise the feed and provide better facilities before going into a feeding program.

Results indicated that 80 per cent of the respondents did not raise enough grain to fatten their calves, 15 per cent raised enough to feed most of their calves, and only 5 per cent, or one respondent, raised sufficient amounts for fattening needs.

Although only one operator raised enough grain for his feed needs, eleven indicated they could. It is believed by the writer that a portion of the respondents were thinking in terms of creep feeding their calves and not also fattening to heavier weights when responding to the question about producing their needed grain.

Fifty per cent of the producers felt they could buy the feed to fatten their calves with a profit. Ten per cent indicated they could buy part of the feed needed, while forty per cent were sure feeds could not be purchased if a profit were to be made in a fattening program.

In general, the prices each producer felt he could pay for various feeds ranged very close to present market prices: ear corn at \$1.10 per bushel, grain sorghum at \$1.50 to \$1.60 per hundred weight, and commercial feed mix at from \$2.50 to \$3.00 per hundred weight.

When questioned if they could provide pasture for calves between weaning and starting in a feed lot, 14 respondents indicated they could, three could not, and the other three would soon be able to do so.

Eight producers believed the practice of grazing their calves on good pasture between weaning and the feed lot would pay, five producers did not know for sure, and seven felt it would not pay. Eighty-five per cent of the respondents believed they could profitably fatten their calves on good pasture with grain self-fed.

Sixteen producers believed that fall calves are best suited for a fattening program. The main advantages given for fall calving were:

- 1. Calves are large enough to utilize pasture to the fullest and will be larger when they go on feed.
- 2. Usually, feeds are cheaper when calves are ready to wean and feed in the late summer.
- 3. Weather is more suitable for feeding (late summer through early winter).

Four producers believed that spring calves are better suited for a fattening program. Their reasons for preferring spring calves were:

- 1. Calves start out and grow off better.
- 2. No creep feed is needed.
- 3. Hit best markets (planning to sell in summer).

#### Labor

Tables VII and VIII are used to show the variation in labor required among groups with different size of herds. Table VII shows the labor required per cow for different jobs performed. A definite inverse correlation exists between size of herd and amount of labor required. The smallest herd group had the largest total labor per cow of 2.81 ten-hour days. The next size herd group had 1.23 ten-hour days per cow, and the largest herd group (126 or more cows) averaged .74 ten-hour days per cow.

### TABLE VII

# NUMBER OF 10-HOUR DAYS OF LABOR REQUIRED FOR PRESENT FRACTICES AND SIZE OF OPERATIONS BY SIZE OF COW HERD

Herd Size	& Average	Average Tot Feeding <sup>b/</sup> Per Cow	al Number of 10-Ho Practices c/ Mgnt.of Cattle C Per Cow	ur Days Repair Maint. <u>d</u> / Per Cow	All Labor Average Per Cow	Per Cent Hired
0 - 35	(28.4)	1.19	1.12	.58	2.81	6 (1)
36 - 50	(42.0	0.60	0.65	•35	1.61	4 (1)
51 - 125	(68.6)	0.49	0.56	.17	1.23	26 (3)
126 & Over	(226.5)	0.29	0.36	.08	0.74	61
an and the state of the	an a	New York of Kingson and State State of St	nanista se nana fan a sana panja kata panja kata se nana panja kata se na se na se na se na se se na se se na s		auroan marantan ang marantan sa	

a/ Estimates apply to size of herd and practices as reported in earlier tables of questionnaire.

b/ Includes winter feeding, creep feeding of calves, and any fattening operations reported earlier as "usual" operations.

c/ Includes movement of cattle about farm, buying and selling, administering medicines, etc.

d/ Includes only expected annual labor applied to repair and/or maintain livestock facilities. Excludes any constructing of <u>new</u> facilities.

Very little labor was hired by the small herd operators while, in the larger herds, the operators hired a much higher per cent of required labor. The group with 126 or more cows hired 61 per cent of their labor while the group with 35 to 50 cows hired only 4 per cent.

A number of comparisons can be made on labor used for different size con herds in Table VIII. Two significant comparisons are the monthly totals per con and the total hours required for each practice under different size of con herds. The group with less than 35 cons had a yearly labor use of 11 hours per con for feeding while the group with more than 125 cons used only 2.9 hours per year per con. It is interesting to note that almost four cons in the large herd size could be handled with the labor used per con in the small herd size. The small herd size had a labor requirement per con of 28.1 hours per year while the large herd size required only 7.4 hours of labor per con for one year.

One reason for differences in labor needs per cou in different size herds is that it takes as much time to drive to a pasture to observe 50 or even 100 cows as it does to check on 25. In management or even feeding, less time per cow is spent with the larger size herds because of the time used in preparation for the various jobs performed.

The annual repair and maintenance labor required per cos varied considerably. Those with more than 125 cows used only 0.9 hour while those with less than 35 cows used 5.9 hours. Operators of the larger herds owned better land with more productive pastures, thus less fence per cow was needed. Also, the operators of the larger herds tended to have fences requiring less repair and maintenance.

# TABLE VIII

HOURS OF LABOR REQUIRED BY MONTHS AND FER CON FOR PRESENT PRACTICES AND BY SIZE OF CON HERDS

Size of Herd	and the second secon		line frank i landa úr slær ny slæfskala fra	AVE	AGE HO	URS OF	LABOR	BY MC	NTH PE	R CROU	<sup>y</sup> P			Totals
and Practices	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Totals	Per Cow
35 & Under (28.4)	· · · ·	•		с. 19										
Feeding	44	43	40	18	16	16	16	14	17	19	32	40	315	11.0
Mgmt. of Cattle	22	24	28	28	26	26	26	26	30	28	28	26	318	11.2
Repair-Maint.	17	15	17	13	10	8	\$	8	8	10	-28	25	167	5.9
TOTAL	83	82	85	59	52	50	50	48	55	57	88	91	800	
Per Cow	2.92	2.88	2.99	2.07	1.83	1.76	1.75	1.69	1.93	2.00	3.09	3.20	50 ma ap.	28.1
36 to 50 (42)														
Feeding	36	36	32	13	14	12	$1l_{2}$	15	14	12	23	34	252	6.0
Ngat. of Cattle	22	22	22	24	21	20	21	20	22	28	28	26	276	6.5
Repair-Maint.	12	10	14	13	13	13	12	8	18	12	12	14	151	3.6
TOTAL	70	68	68	50	48	45	47	40	<b>5</b> 4	3 20	1 20	74	679	7 2 7
Per Cow	1.00	1.01	1.01	7.72	L . 1.4%	1.07	de e dada	• 73	7.40	7.443	2.70	2.10	4,000 Links (1600	الله <b>الله الله</b>
59 to 125 (66.6)														
Feeding	56	56	48	22	10	14	10	14	10	18	34	46	338	4.9
Mgnt. of Cattle	36	36	38	34	24	26	26	26	26	32	42	40	386	5.6
Repair-Meint.	10	6	24,	12	4	.4	6	6	6	10	12	20	120	7.8
TOTAL	102	98	110	68	38	44	42	61	46	0V 077	56 1 1 0	100	0 <b>4</b> 4	10 2
Per Con	1.48	Lolido	1.50	•99	•22	• 04	• 01	• 044	.01	•07	da • da 2	1. • 74		74•3
126 & Over (226.5)														
Feeding	112	112	112	34	26	26	27	27	25	31	36	94.	662	2.9
Ngmt. of Cattle	62	62	78	58	66	72	72	76	76	63	64	64	830	3.6
Repair-Maint.	14	22	30	171	12	112	12	12	122	127	111	16 17),	7 608	•9
TOTAL		770 770	22V 07	114 50	.1.5	1.0	.29	.50	54.	.56	.50	.76	- L U J U Maximum	7.1
Fer row	0)	•09	•71	صر .	لحر بتيم ک	<b>♦</b> 400 ∦	● ७७ ह	* <b>,</b> * *	وماني ک	• 7 2	<sup>مرد</sup> م <sub>کن</sub> پ	•••		್ರಿ <b>ಕ</b> ಿಡ್ರಿ :

N

### Marketing Practices

Some aspects of the marketing program reported by four groups of beef cattle producers in Choctaw County are presented in Table IX.

### TABLE IX

MARKETING PRACTICES BY SIZE OF CON MEND OF EEEF PRODUCERS IN CHOCTAM COUNTY

Narketing Program	35 & Under (28.4)	36 to 50 (42)	51 to 125 (68.6)	126 & Over (226.5)
Avg. Ages of Galves Sold	7.3 mo.	8.3 mo.	6.6 mo.	8.2 mo.
Avg. Weight - Steers Avg. Weight - Weifers	473# 457#	474# 444#	<b>431</b> # 40 <b>7</b> #	476# 450#
Avg. Ages Cows Sold	10.4 yrs.	11.3 yrs.	11.2 yrs.	11.0 yrs.
Avg. Weight - Cows	915#	780#	870#	955#
Avg. Age Bulls Sold	5.6 yrs.	7.2 yrs.	6.8 yrs.	8.0 yrs.
Location of Markets				
<u>Calves</u> Central Locally	1 /4	0 5	0 5	3 59

a/ Portions of the calves from the cow herd group 126 & over were marketed direct to feeder buyers and delivered locally.

The ages and weights of both cows and calves reported in each of the different herd size groups were similar.

The group with 51 to 125 cows sold their calves at younger ages than did the other three groups. Three of the respondents in the 51 to 125 cow herd size had their herd calving year-round; therefore, their calves were marketed throughout the year.

Bulls in the larger size herds were kept longer, indicating the practice of rotating bulls within the herd, whereas the bulls in smaller herds were replaced more often.

Local markets were used almost exclusively by the cow and calf operators throughout Choctaw County. One respondent in the group with less than 36 cows did market part of his calves in the central market in Oklahoma City and some of the respondents with more than 125 cows sometimes marketed direct to feeder buyers. Eighty-five per cent of the herds reporting were predominantly Herefords while only 15 percent were Angus. Local markets tended to discriminate against black calves, thus two of the three Angus breeders attempted to market either direct or at central markets.

Older cows were lighter in weight when marketed. The group with more than 125 cows sold the heaviest cows at 955 pounds.

## Adjustment Problems and Possible Potentials

Additional information obtained while interviewing the twenty producers regarding age and occupational status of each respondent seemed significant when considering proposed changes in management practices.

Of the five respondents in the 35 and under cow herd group, two were over 55 years of age and draw retirement checks, two were less than 45 years of age and were employed full time off the farm, and one was between 45 and 55 years of age and devoted 135 ten-hour days to his small herd of 35 cows. The latter operator's wife was a school teacher and provided off-farm income needed to supplement the income from the small cattle enterprise. The 135 ten-hour days shown by this small operator raised the average labor requirement for this group considerably.

Of the five respondents in the group with 36 to 50 cows, two were over 55 years of age with one retired and one employed full time, one was 45 to 55 years of age and was receiving additional income from the conservation reserve program, and two were less than 45 years of age and full-time employed off the farm. Indications were that one of the younger respondents in this group had hopes of enlarging enough to be able to cease working off the farm, while the others anticipated little change in this respect.

Of the five respondents in the group with 51 to 125 cows, two were 55 years of age. One of these did custom hay baling for additional income while the other raised crops for cash. The other three respondents were under 45 years of age, and each raised crops for cash. One of the three had a part-time farm insurance agency. One other was full-time employed and the other relied on farm income alone.

Of the five respondents in the group with 126 cows and over, two were between 45 and 55 years of age. One had additional income from cash crops and the other sold some hay and received income from conservation reserve payments. The other three producers with the larger size herds were under 45 years of age. One of these was employed full time (vice president of a bank). One had some cash crops along with a small business. The other young producer had cash crops and was the only respondent with income from a feed lot enterprise.

Since commercial feeding of calves in Choctaw County could be possible in the future, the following question was asked: "If a commercial

feed lot was available locally, would you be interested in using it?" Eight of the respondents indicated definite interest, six were not interested, and six were interested in the costs before deciding. Three of the six who were not interested were over 55 years of age, one was creep feeding his calves and selling quality fat calves. One indicated he would have to improve his quality before he would be interested, and the other producer who was not interested was feeding his calves now.

Seven producers fed no minerals other than salt. According to Morrison, pastures grown on phosphorus and calcium deficient soils may cause serious results in livestock unless this deficiency is corrected.<sup>4</sup> Calcium and phosphorus deficient soils are common in Choctaw County, especially on the poor upland soils. In most cases where a farm operator fails to feed minerals to his livestock he usually does not have a good fertilization program. In this case all seven producers feeding no mineral other than salt operate more poor land with relatively low yielding pastures. This practice of feeding complete minerals along with salt indicates rather clearly the need for some adjustments in even minor management practices in the production of beef cattle in Choctaw County.

Of the producers with less than 35 cows, two believed their operations were too small for feeding to be profitable, one indicated it would take too much time, one said he would enlarge and try feeding if he were younger, and one stated it would be best to feed his calves until they were about 12 to 15 months of age. The latter individual stated he could use a maximum of pasture and a minimum of grain and produce an 800 to 1000 pound yearling very economically.

<sup>4</sup>Frank B. Morrison, <u>Feeds and Feeding</u> (22nd ed. Clinton, IGUS, 1956), p. 95.

Of the producers with 36 to 50 cows, three indicated that offfarm employment left too little time for developing and operating a feeding program, one producer said health and age prevented him from feeding, and one felt that creep feeding the calf up to 8 or 9 months could produce baby beeves at more profit than selling lighter feeder calves.

Of the producers with 51 to 125 cows, two said age kept them from fattening their calves, one indicated he could make more money creep feeding his type calves and selling them as fat slaughter calves than he could by selling lighter feeders, one believed that feed with pasture was perhaps the best profit maker, and one believed he could increase his income most by raising the feed and fattening all his calves.

In the group with more than 125 cows, three believed it paid to fatten at least part of their calves (heifers, light-weight calves, and better quality calves) as long as they raised their own feed. These three planned to feed more as they became able to raise more grain. One indicated he could not raise his own grain for feeding at home but he could make more profit by feeding his calves through a commercial feed lot than he could by selling as feeders. One other believed that if heifer and steer price spreads remain over 24 per pound, he could more profitably feed the heifers.

Only one respondent indicated no adjustments should be made in his present livestock program. Advanced age and health seemed to be reasons for this producer being satisfied. Indicated adjustments needed

by number of responses given by producers were as follows:

Improve pastures		11 or 55%
Adjust feeding programs		10 or 50%
Nake adjustments in breeding progra	M	9 or 45%
Improve breeding stock		8 or 40%
Increase herd size	<b>a i i i i i i</b>	4 or 20%
Need better help		] or 5%

Some of the reasons given for these needed adjustments were: carry more cattle per acre, better pastures will decrease feed costs, can better utilize pastures, can sell heavier calvos, and improved quality increases income per calf.

#### CHAPTER IV

#### POTENTIAL OF SELECTED KINDS OF ADJUSTMENTS

Some of the need for adjustments in the management of beef cattle enterprises in Choctaw County were identified by analysis of information from 20 producers. Adjustment needs indicated by a high per cent of the respondents in the survey were improvement of pastures and change in feeding programs. Because of their importance to the beef producers of the county, these two adjustment needs were selected as examples for use in demonstrating possible economic returns from the improvements.

## Pasture Development

Pasture is the foundation of economical beef production; it commonly furnishes much cheaper feed than harvested crops. As pointed out by Morrison, unless the beef herd is maintained on good pasture during as large a part of the year as possible, the costs will generally be high and the profits much reduced.<sup>5</sup>

Over 52 per cent of all pasture land used by the twenty respondents in the survey was unimproved. This indicated that farmers in Choctaw County did not always recognize the productive potentials of pasture, and many gave little attention to portions of their pastures.

In recent years advancements have been made in many areas of the

<sup>5</sup>Ibid., p. 731.

state in the general adoption of pasture improvement practices. In a survey conducted in southeastern Oklahoma, potential production for improved pastures with average management practices were as follows:

Type of Land	Ĩ								ł	4 C)	res	: 1	lee	d	ed	P	er	Animal (	hit
Botton land	٠	٠	٠	٠	٠	•	¥	•	٠	٠	•	•		÷	*	٠	•	3.0	
Good upland		•	•	٠	٠	¢	٠	•	•	•	•	•	٠	•	٠	٠	٠	3.4	
Poor upland	*	*	•	*	•	•	ŧ		•	٠	٠	•	•	٠	ű	4	•	4.8	

At these rates, a surplus in hay can be obtained during periods of lush growth to use for wintering the animal units as indicated. These grazing rates were used to estimate the potential production of different kinds of land in Choctaw County (Table X).

Comparisons of reported pasture yields to potentials available under average management practices indicate much improvement is possible. The relatively low production from the unimproved pastures suggests that improving these pastures to their economic potential may provide the major possibility of increasing income from beef production in Choctaw County.

Costs and returns from improving the unimproved pastures in different cow herd size groups were estimated as shown in Table XI.

6 Back and Hurt, (in process of publication, 1961).

# TABLE X

## INFORMATION GIVEN BY TWENTY BEEF PRODUCERS AS TO TOTAL ACRES, LENGTH OF GRAZING SEASON, RATE PER ACRE AND POTENTIALS FOR DIFFERENT TYPE PASTURES

<ul> <li>An and a second s</li></ul>	Avg. Production	i fran 20 Produce	ers Reporting	Potential Production <sup>b</sup>				
rasture lype	Acres	Months	Rate	Nonths	Rate for Avg. Practices	Nate for Above Avg. Practices		
Botton Land Improved	2360	7.8	2.2	9.0	3.0	2.05		
Unimproved	1275	7.2	4.8	-				
üpland - Good Improved	2995	8.0	3.8	9.0	3.4	3.25		
Unimproved	3010	7.7	7.0					
Upland - Poor Improved	130	8.1	3.0	9.0	4.8	4.30		
Unimproved	1695	6.2	8.2					

a/ Rate refers to the number of acres to carry one mature animal for the months indicated.

b/ Determined from data presented by Back and Hurt, (in process of publication, 1961).

R

# TABLE XI

# ESTIMATED INCREASED INCOME POTENTIAL BY DEVELOPING UNIMPROVED PASTURES, AVERAGE MANAGEMENT PRACTICES AND DIFFERENT SIZE OF COW MERDS

Size of Cow Herd Pasture Type	Presenta	ate Potentialb/	Increase	Cost of Increase	Return from Increase	Net Income@/
Less than 35 Cows:						
Good Upland Unimproved	5.09	8.37	3.28	146.68	238.42	91.74
Poor Upland Unimproved	6.53	13.92	7.39	343.54	537.18	193.64
TOTAL	xx	XX	10.67	490.22	775.60	285.38
<u>36 to 50 Cows</u> :						
Good Upland Unimproved	12.96	26.47	13.51	463.20	982.04	518.84
Poor Upla <b>nd</b> Unimproved	5.68	12.18	6.50	304.94	172.48	167.54
TOTAL	<b>XX</b>	XX	20.01	768.14	1454.52	686.38
<u>51 to 125 Cows</u> :						
Botton Land Unimproved	5.13	10.99	5.86	169.8%	425.96	256.12
Good Upland Unimproved	17.09	30.00	12.91	524.96	900.41	375.45
Poor Upland Unimproved	9.74	26.71	16.97	660.06	1222.03	561.97
TOTAL	xx	XX	35.74	1354.86	2548.40	1193.54
				, W		

ž

TABLE XI (CONTINUED)

<u>Size of Cow Herd</u> Pasture Type	Present <sup>a</sup> / <sup>R</sup>	ate Potential <sup>k</sup>	Increase	Cost of c/	Return from <sub>d</sub> / Increase	Net e/ Incone
126 or More Cows:			· .		• .	
Bottom Land Unimproved	26.74	52.75	25.01	814.46	1890.67	1076.21
Good Upland Unimproved	23,90	66.62	44.92	1204.32	3265.23	2060.91
Total	xx	XX	70.93	2018.78	5155.90	3137.12

a/ Animal units grazed nine months as related to pastures shown in Table VI.

- b/ Potential animal units grazed nine months as shown in Table X.
- c/ Cost of increase was figured at \$3.36 per acre improved. Improvement of pastures included: preparing seed bed, application of 2 tons line per acre, sprigging Bermuda grass, fertilizer cost and cost of application, discing or harrowing, and clovers and lespedeza cost plus seed-ing. The average cost per acre of this establishment program in Choctaw County as figured by the Agricultural Stabilization and Conservation Office is: <u>Total Cost</u> - \$38.00; <u>Agricultural Conservation Program Payment</u> - \$22.60; <u>Farmer Cost</u> - \$15.40. These cost figures include all expenses other than depreciation of equipment and are very similar to establishment will last 12 years and the establishment cost amortized at 6% interest for this period amounts to \$1.64 per acre per year. An annual charge of \$2.02 per acre for fertilizer brings the total cost per acre per year to \$3.86.
- d/ Return per cow figured at \$72.59 as determined by Back and Hurt, (in process of publication, 1961).

e/ Net returns to labor, forage production, pasture, and management.

ŝ

Development of all unimproved pastures to their potential production under average management practices could give a tremendous increase in income to the beef cattle producers in Choctaw County (Table XII).

#### TABLE XII

# SUMMARY OF INCREASED INCOME POTENTIAL BY DEVELOPING UNIMPROVED PASTURES, AVERAGE MANAGEMENT PRACTICES AND FOUR HERD SIZE GROUPS

Present Herd Size	Potential	Potential Net Income	Increase <sup>a</sup> /
Colonia and a construction of the statement of the	vow liferease	Per Herd	Per Cow
35 & Under (28.4)	10.67	285.38	26.74
36 to 50 (42)	20,01	686.38	34.29
51 to 125 (68.6)	35.74	1193.54	33.39
126 & Over (226.5)	70.93	3137.12	44.08
Average per Group (91.37 Cows)	34.34	1325.60	34.62

a/ Net returns to labor, forage production, pasture production and management.

The average size herd for the twenty producers in the survey was 91.37 cows. They could increase the carrying capacity of their farms by 34.34 cows just by developing their unimproved pastures to their potential under average management practices. However, greatly increased capital investment per farm would be necessary to develop the pasture and increase the cow herd by this potential. By making this increase in investment, income to labor, management, pasture and hay production per herd would increase by about \$1325.60. With assumed continuation of current feeding practices that include very little grain and protein, the income from this increased roughage production would be very high per farm. Additional increments in income could be expected with change in feeding practices with respect to grain and protein.

Development of 100 per cent of these unimproved pastures to their potential probably cannot be accomplished under present distribution of property rights. Operators are unlikely to establish permanent pastures on rented land. Also, if the larger operators establish improved pasture on a large number of acres, the Agricultural Conservation payments would be a limitation. Currently, there is a limit to how much the Agricultural Conservation Program will assist any one farmer. However, regardless of the limitations, much pasture development could take place in Choctaw County.

### Feeding Adjustments

Fifty per cent of the beef producers surveyed in Choctaw County indicated that adjustments were needed in their feeding practices. An actual feeding practice carried out by one of the respondents is presented in Table XIII. Cattle fed by this operator were heifer calves out of first-calf heifers that were too light to sell at the normal marketing time and were thus "carried over" and fed later. The writer recognizes that these lightweight heifer calves (288 pounds) are far below the average (439 pounds) reported in the survey. However, because only in this group was complete information available, this feeding program was used as an example. Information on the producer's practices and results is as experienced in respect to weights and feeding amounts. The weights were obtained through a performance beef testing program. The producer had home-grown grains ground and mixed, and he was able to keep accurate records on feed used.

The record on 20 heifer calves was as follows: Ear tags were placed in each calf's ear at birth and the dates were recorded. These birth dates were averaged and figured as December 24, 1958. In neasuring production of the cows, each calf was weighed on July 24, 1959. These weights at seven months of age averaged 288 pounds. Following weaking on July 24, the heifers were maintained on Bermuda grass pasture until November 15 when they started receiving four pounds of ground ear corn per day. On December 15 they were started on mixed alfalfa-Johnson grass hay at the rate of six pounds per day. This feeding was maintained until April 15, 1960, and they consumed a total of 600 pounds ear corn and 720 pounds alfalfa-Johnson grass mixed hay. Sixty pounds of a 32 per cent protein supplement and 20 pounds of complete mineral were fed during the year. On April 15, the heifers were again placed on good Bermuda grass-Johnson grass-lespedeza pasture with one yearling to each 1.5 acres.

On October 26, the heifers were taken off pasture and placed on dry lot feeding. At that time they weighed 650 pounds. The heifers were just over 22 months of age at that time. The dry lot feeding rations consisted of 90 per cent ground corn cob meal and 10 per cent connercial supplement with 32 per cent protein. With the price of corn at \$1.10

per bushel, the price of protein supplement at 04.00 per 100 pounds, and a cost of 35 cents per hundred for grinding and mixing grain, the total grain ration cost was \$2.19 per hundred weight. Poor quality hay fed at 3.5 pounds per day completed the ration.

The twenty heifers were fed for 97 days and sold on February 1, 1961, at an average of 871 pounds. They gained 221 pounds for the 97day feeding period which was an average of 2.25 pounds gain per head per day. With a feed conversion of 7.3 pounds of grain and two pounds of hay to one pound gain, feed cost amounted to 17.5 cents per pound of gain.

# TABLE XIII

FEEDING	PROGRAM	FOR TH	enti	MEIFERS	i As	REPORTED
BY	ohe res	PONDENT	IN	CHOCTAN	COU	NTY

Averages	Data	Cost or Returns	Net Values <sup>a</sup> /
<u>Birth Date</u>	12/24/58		
Veaning			
Date	7/24/59		:
Weight	288 lbs.		
Value @ \$22.70 per 100#			\$ 65.38
Pasture Charge C/			
7/24/59 -11/15/59	110 days	3.08	
4/15/60 - 10/26/60	190 days	5.32	
Feed Per Yearling Heiferd/			
Grain 11/15/59 - 4/15/60	600 lbs.	11.10	
Nay 12/15/59 - 4/15/60	720 lbs.	6.50	
Protein Supplement from Weaning to Feed Lot	60 lbs.	2.40	
Complete Minerals from Weaning to Feed Lot	20 lbs.	.60	
Weight			
10/26/60	650#		
Value @ \$18.42 per 100# <u>b</u> /		119.73	90.73

Net Cost or Data Averages Values<sup>a</sup> Returns Feed in Dry Lotd Grain Ration for 97-Day Feeding 1613 lbs. 35.33 Period Hay for 97-Day 388 lbs. 2.91 Feeding Period Sale 2/1/61 Date Weight<sup>S</sup> 871 lbs. Value @ \$19.82 b/ 172.63 134.39 per 100#

TABLE XIII (CONTINUED)

a/ Net incomes are returns to labor, management, and cow cost.

- b/ Values placed on the heifers at their different weights, grades and dates involved were obtained by averaging prices reported in the Livestock and Meat Statistics Bulletin No. 230 and Supplement for 1959 to Statistical Bulletin No. 230.
- c/ Pasture charges are figured at \$20.40 per animal unit per year as reported by T. E. Tramel and D. W. Parvin, <u>An Economic</u> <u>Appraisal of Beef Cattle Production in Northeast and East Central Mississippi</u>, Agricultural Experiment Station Bullctin B-497, (Mississippi State College, 1953), p. 14.
- d/ Feed prices were: Corn \$1.10 per bu.; Commercial protein supplement \$4.00 per 100#; Hay \$18 per ton; Grain fed yearlings
   \$1.85 per 100# and complete minerals \$3.00 per 100#. Amounts of feed were actual as reported by producer.
- e/ Sale weight is the actual pay weight following 2 per cent shrink deduction.

An alternate feeding program is illustrated in Table XIV. The same type calves were used in the proposed and actual feeding programs to give better comparisons. The first possible adjustment in the actual feeding program is change in the weaning weights of 268 pounds at seven months of age. These weights are extremely light compared to the averages of 439 pounds for all heifers reported in the survey. Various factors influence the need for creep feeding. It has been said, "Creep feeding is more apt to be profitable if the herd consists of numbers of first-calf heifers or old cows, if drought or mud reduces the forage available as winter pasture, or if the spread between standard or good and choice grading calves is considerable."<sup>7</sup>

Years ago, beef cattle usually were two or three years of age before they were fattened for market. Now, the cattle raised for beef are generally fattened as they grow. Such cattle are fattened for marketing at 10 to 18 months of age as "baby beeves" or "fat yearlings." Some are even sold for slaughter at weaning time or soon afterwards as "heavy fat calves."<sup>8</sup>

Morrison states further that the pronounced change in the age at which beef cattle are slaughtered can be traced to two factors: (1) the consumers' desire for rather small cuts of beef and beef which is tender and has a minimum of waste fat, and (2) cattle fattened when young produce much more economical gains than those which are older.

<sup>8</sup>Morrison, p. 692. <sup>9</sup>Ibid.

<sup>&</sup>lt;sup>7</sup>Roscoe R. Snapp and A. L. Newmann, <u>Beef Cattle</u> (5th Edition, New York, 1960), p. 522.

# TABLE XIV

# PROPOSED FEEDING PROGRAM FOR HEIFERS

Averages	Data	Cost or Returns	Net f/ Values
Birth Date	12/24/58		
Weaning			
Date	8/24/59		
Weight <sup>a</sup>	401 lbs.	. Alter	
Value @ \$23.90 per 100#		95.84	
Creep Feed			
At \$2.50 per 100#	183 days 628 lbs.	15.70	
Calf Minus Creep Cost			80.14
Pasture Charge			
8/24/59-10/24/59	60 days	1.70	
Feed on Pasture <sup>C</sup> /			
8/24/59 - 10/24/59	60 days		
5# Grain Sorghum per day	300 lbs.	6.00	
Complete Mineral	3 lbs.	.10	
Gain on Pasturec/	84 lbs.		
Weight, 10/24/59	485 lbs.		
Value @ \$22.70 e/ per 100#		110.10	
Calf Value - Pasture Gain Cost			102.30

Averages	Data	Cost or Neturns	Net f Values
Feed in Dry Lot <sup>d/</sup>			
Grain Ration for 100-Day Feeding period, 14.3#/Day	1430 lbs.	31.32	
Nay for 100-Day Feeding Period, 2 lbs. per Day	200 lbs.	1.80	
Sale			
Date	2/3/60		
Weight	705 lbs.		
Value © \$20.50 per 100# e/		144.53	110.50

### TABLE XIV (CONTINUED)

- a/ Morrison, p. 737, reports expected additional gains per day from creep feeding are .38 with 1.50 pounds per day average for non-creep fed calves. Grain used is 9.03 lbs. per pound of gain. Creep fed calves were worth \$1.21 more per hundred weight at weaning time.
- b/ Same as c/ in Table XIII.
- c/ W. C. Elder, Wayne W. Huffine, and Byron H. Lake, <u>Pasture Man-agement and Forage Crop Production Studies; Progress Report</u>, <u>1959</u>, (Processed Series P-363, Oklahoma State University, 1961), p. 14.
- d/ Information on feed lot gains, feed needs, and other related data on this type was obtained in Morrison, p. 717.
- e/ Values placed on the heifers were obtained in the Livestock and Meat Statistics Bulletin No. 230 and Supplement for 1959.
- 1/ Net incomes are returns to labor, management and cow cost.

Because of the light weaning weights in the actual feeding program, it was proposed to creep feed the calves. Seven months is considered an early weaning age with these type calves; thus, calves were weaned at eight months in the proposed plan. The pasture feeding on grass gives an additional profit in the proposed plan. It appears that the calves may make more profit for the producer if sold at this time off pasture and grain. Only \$8.20 additional income for labor, risks, and facilities was obtained from the 100-day feeding period. If grain were high in price, one may not feed in the dry lot; but if grains were plentiful and cheap, returns could be higher by dry-lot feeding.

Net returns at weaning in the two feeding plans were \$65.38 for the actual and \$80.14 for the proposed. The actual program had a \$90.73 per head value at 22 months of age while the proposed program gave a \$102.30 calf at 10 months of age.

Adjustments on management practices other than pasture development and feeding could give further economic returns. Calves could be grouped for more effective marketing by adjusting the breeding programs. Better sires could give immediate increases in selling price per pound in many beef herds in Choctaw County. Other adjustments could be profitable in both feeding and pasture programs. Greater utilization of existing pastures by rotation grazing, mowing, and other practices would give additional income with little expense to the operators.

#### CHAPTER V

#### SUMMARY AND CONCLUSIONS

The major objective of this study was to determine if and how the beef cow and calf producers in Choctaw County could adjust their operations for greater economic returns. A survey of 20 producers was conducted to provide basic data for the study. Producers included in the sample were selected to represent small to large size herds and different areas of the county. Problems and limitations to potential adjustments such as age, health, and available time were obtained in some interviews.

After completion of the survey, results were tabulated and presented by different cow herd size groups. Comparisons were made between groups in the discussion of data.

Large operators practiced fall calving to a greater extent than did the small operators. Small operators owned a higher per cent of registered cows. Large operators maintained a small per cent of registered cows to produce replacement breeding bulls for their commercial herds.

More shall size producers rented a higher per cent of their land. The smaller producers used their cattle enterprise as additional income to their off-farm jobs. Larger producers owned a higher per cent of good upland and bottom land than did the smaller size groups.

Storage facilities were adequate for roughage but lacking for grain.

Silage was unimportant. Only one of 20 producers had feed lot facilities. Highty per cent of the operators had creep feeding facilities.

Investment per cow decreased as the size of the herd increased. More rented land allowed lower investment per cow. Operators with small hords invested more in the cow unit and less in machinery than did the larger operators.

Percentages of cropland and hay production decreased with decrease in size of operations. More operators could raise grain. Acres of pasture per convaried from 5.6 to 10.0. More pastures on good land were improved than was the case on poor land.

Einter feeding started about December 1 and ended about April 1. Feeding programs differed little between different size herds. Farmers who raised grain tended to feed more grain. Shall herd operators with off-farm income practiced creep feeding each year while large herd operators without off-farm income adjusted their creep feeding programs with variation in feed prices.

Considerably more labor was used per cow in the small size herds. Almost four cows from the largest herd could be handled with the labor needed for one cow in the smallest size herd. Less pasture acreage per cow contributed to less feacing per cow for the larger operations. Large herd operators had better feaces and, therefore, less maintenance costs. Small size operators hired little or no labor while the largest size operators averaged hiring over 60 per cent of their meded labor.

A large proportion of all cattle raised in Choctas County was sold through the local auction market. Only the largest operators with high equality calves were able to sell on contract. Only one operator out of

twenty hauled his calves to a central market in 1960.

Results of this study indicated that adjustments in operations have potential for increasing economic returns to the beef producers in Choctaw County. The survey results indicated further that many farmers in the county did not always recognize the economic potential of pasture improvement. The writer believes that improved pasture management can contribute more toward increasing income to the beef producers of the county than any other single adjustment.

Production of "baby beeves" or "fat yearlings" should give greater economic returns than present programs. Feeding calves to heavier weights will not be a major beef enterprise until more grain is produced in the area.

Age, health, limited time because of off-farm employment, and fear of going in debt are some of the factors limiting the expansion and adjustment of many beef producers in Choctaw County.

Results of demonstrations on improved management practices could dispel the fear some operators have of going in debt, and also they could have an influence on lending agencies of the possible economic potentials to various size of operations.

Nineteen of the 20 respondents in this survey recognized that adjustments should be made in their operations. Six different needed changes were listed a total of 33 times. The writer concluded from this information that most beef producers realize they need to adjust their management programs. Most operators know which adjustments need to be made. Motivation of the producers and the required increase in capital investment seem to be the big problems. Demonstrations of improved management practices by the better operators in different areas and various herd sizes will, perhaps, provide the greatest motivating influence.

#### BIBLIOGRAPHY

- Back, W. B., and Verner B. Murt. <u>Potential for Agricultural Adjustment</u> <u>and Development in the Ouachita Highlands of Oklahoma</u>, Oklahoma <u>Agricultural Experiment Station Bulletin B-582</u> (in process of publication, 1961).
- Dowe, T. W., J. Matouchima, and V. H. Arthaud. <u>Full Feeding vs. Limited</u> <u>Feeding for Beef Production in Dry Lot and on Fasture</u>, Agricultural Experiment Station Bulletin 440, (University of Nebraska College of Agriculture, 1957).
- Dyer, A. J., and L. A. Weaver. <u>Fattening Comparisons, Steers vs. Heifers</u>, Agricultural Experiment Station Bulletin 646, (University of Missouri, 1955).
- Elder, W. C., Wayne W. Huffine, and Byron H. Lake. <u>Pasture Management</u> and Forage Crop Production Studies; Progress Report, 1959, Processed Series Publication No. 363, (Oklahoma State University, 1961).
- Morrison, Frank B. Feeds and Feeding. 22nd ed. Clinton, Iowa: The Morrison Publishing Company, 1956.
- Myers, John H. <u>Statistical Presentation</u>. Ames, Iowa: Littlefield, Adams and Company, 1956.
- Snapp, Roscoe R., and A. L. Newmann. <u>Beef Cattle</u>. 5th ed. New York: John Wiley and Sons, Inc., 1960.
- Tramel, T. E., and D. W. Parvin. <u>An Economic Appraisal of Beef Cattle</u> <u>Production in Northeast and East Central Mississippi</u>, Agricultural Experiment Station Bulletin 497, (Mississippi State College, 1953).
- Agricultural Conservation Program, Choctaw County, Handbook 1961. Hugo, Oklahoma: (Mimeographed material, 1961).
- Livestock and Meat Statistics Eulletin No. 230 and Supplement for 1959, U. S. Department of Agriculture, Agricultural Marketing Service, (Mashington, D. C.: United States Government Printing Office, June, 1960).



#### APPENDIX

#### QUESTIONNAIRE

## Cow and Calf Beef Cattle Program Choctaw County, Oklahoma

Farm Munber

## Land Description

- 1. Bottom land
   Good Upland
   Poor Upland

   2. Gropland
   Pasture Improved
   Pasture Unimproved

   3. Lucious, Native
   Wasteland
   Woodland
- Farmstead 4. Land owned Land Rented Total Land

Total Capital Investment: Includes Land, Buildings, Livestock & Machinery

(1) \$10,000 to \$50,000 (2) \$50,000 to \$100,000 (3) \$100,000 over

Crop Acreages and Production

	ACRES PLANTED 1958 1959 1960			PROD 1958	UCTION / 1959	AVERACE YIELD/ACRE	
Gorn							
Grain Sorghums	۱				,		
Forage Sorghums							
Small Grains							na na shaqaa ka shaqaa ka shaqaa ka shaqaa ka shaqaa ka shaqaa ka shaqaa ah
Native Meadow					: :		
Ha <b>y Cro</b> p - Alfalfa							
Hay Crop - Other Legumes							
Hay Crop - Grass							an ann an

Usual Pasture Use and Grazing Rates:

for the second	รู้การสารแห่งสมหรังการสารสารสาร	n a de service en esta a la companya de participation de service de companya de la companya de la companya de s	an sa na na manana ang kanana na n
Type Pasture	Acres	Length of Grazing	Number of Animal Units
an an the second state of the s		nanga maganaka kanangka kanangka talangka tala kanangka kanangka kanangka kanangka kanangka kanangka kanangka k	n an
a an ann an ann an an an ann an ann an a	and a state of the second s	ener ander staten en e	ne on de selectro de la constante de la constituire de la constituir de
		anna ann an ann ann ann an Chlorair Ganan ann an Mhine ann air ann an Anna ann an Anna ann an Anna an Mhireann	
ar any sea the second	A ST. C. Lagranger, 74 Conceptual States and States and St.	e med kompeny stransmense men star men star stransmense star og at star star star star star star star s	Anton materia anton formation and a second databatic parts for the transmission of the second parts of the seco
and shared in the second state of the second state of the second state of the second state of the second state	l - State and a state of the st	An	and an and an

Inventory of Beef Cattle: (January 1, 1961)

Type Cattle	Commercial	Registered	Total	
Cows Spring Calving				
Cows Fall Calving	- ·	н. Полоника		
Replacement Heifers				
Yearling Heifers				
Yearling Steers				
Bulls		· · · · ·		

Usual Feeding Practices Per Head:

·				*
Kind of Feed	Cows	Calves	Yearlings	Others
Hay:				
Kind				
Dates Fed				
Lbs. per Day	an a' an di china an a	ng ngan 200 galawan dalam tanta yana minining dalar ta da su a tanan mininin ng pangang sa sa sa sa sa sa sa s	ana ana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny	
Lbs. per Year				
Other Roughage:				
Kind				
Dates Fed		·		·
Lbs. per Day				

# Usual Feeding Practices Fer Heed (Continued):

Kim of Feed	Coars	Galves	Yearlings	Others
Grain:		1944 - J. B. W. M. MARTIN MICH.		anna an
Rind	an man an in die sam die na die staat die staat die staat die sam die die staat die staat die staat die staat	an sa an	ang pang mang pang pang pang ang pang pang pang pa	
Dates Fed	an da an	ĸŦĸġ <mark>una</mark> tokisti t <mark>okatokistokistokista</mark> togosia	antipation-signaphilipations, in substanting on subsidiants	ning da bakang pingan napas (an, kong ping
lbs. per Year				pijoten and descented since a state of the second
· · · ·				
Protein Supplement	- 4 7-8 1-1000-1000-1000-1000-1000-1000-1000-		raan see prijevinske verkenderer seker k	a kan san sa kan sa
Kind			a na 112 Alban antan jamba Majaria amin bisi mta	an martin balancem canad (ministra and a signa a
<u>libs. per Year</u>	and and an an address of the second state of the second state of the second state of the second state of the se	aylan, ya kupat kanya katala ayo ya da kutaki ya akata ya		an bin the state of the state of the state of the
Minerals:				
Kind				
Lbs. per Year				

# Inventory of Feed Storage and Feed-Lot Macilities:

Hay Storage Capacity
Grain Storage Capacity
Ear Corn Storage Capacity
Silage Storage Capacity
Feed-Lot Vacilities - Type and Capacity

# Estimated Average Number of 10-Hour Days of Labor Required For Present Practices and Present Size of Operation<sup>2</sup>

Month	Feeding b/	Management of Cattle c/	Repair & Maint. of Fences, Bldgs, Etc.d/	Total	Percent Hired
January					
February					
March					
April			- 2017-0-0-2019-0-1-2010-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-		
Nay					
June					
July					
August					
September					
October					
November					
December					
TIAR					

- A/ Make estimates apply to size of herd and practices as reported in earlier tables of questionnaire.
- b/ Includes winter feeding, creep feeding of calves, and any fattening operations reported earlier as "usual" operations.
- c/ Includes movement of cattle about farm, buying and selling, administering medicines, etc.
- d/ Include only expected annual labor applied to repair and/or maintain livestock facilities. <u>Exclude</u> any constructing of new facilities.

Marke	etin								
	(1)	Breed (2) Usual Calving Dates							
·	(3)	Age Calves Sold (4) Weight Calves Sold:							
	Stee	ers Neifers (5) Age Cows Sold							
	(6)	Weight Cows Sold (7) Age Bulls Sold							
	(8)	Number Cattle Fattened (9) Age Fat Cattle Mar -							
	kete	ed (10) Weight Fat Cattle Sold: Steers							
	Fei	fers (11) When are Fat Cattle Marketed? Calves							
	4.7%brigilite.com	Fed Cattle (12) Where Marketed? Calves							
	in.com	Fed Cattle							
<u>Other</u>	· In	formation:							
	1.	Do you creep feed your calves?							
	2.	. If you are not now fattening any of your calves, have you ever?							
	3.	3. If you are not fattening any of your calves, why?							
	4.	Do you raise enough grain to fatten your calves?							
	5.	If you do not raise enough grain to feed your calves, could you?							
	6.	Do you raise sufficient roughage to aid in fattening your calves?							
	7.	Could you provide pasture between weaning and starting in feed							
	8.	Do you feel you could fatten your calves on pasture with grain							

self fed?

# Other Information (Continued):

- 9. Do you feel you could buy the feed to fatten your calves and make a profit? \_\_\_\_\_ If yes, what prices could you normally afford to pay for the various feeds? \_\_\_\_\_
- 10. If a commercial feed lot was available locally, would you be interested in using it?\_\_\_\_\_
- 11. Are you now fattening any of your calves? \_\_\_\_\_ If so, are they heifers \_\_\_\_\_\_ steers \_\_\_\_\_ or both \_\_\_\_\_? If so, are they fall calved \_\_\_\_\_\_ or spring calved \_\_\_\_? In your opinion are spring \_\_\_\_\_ or fall \_\_\_\_\_ calves best suited for a fattening program? Why? \_\_\_\_\_
- 12. Would you give me your personal opinion on fattening your calves vs. selling as feeder calves?

13. Do you think any changes should be made in your present livestock program?\_\_\_\_\_ If yes, what changes?\_\_\_\_\_

and a second second

	Grade	& Dates	Length	Weight		Quantities	Describe	Investment of
Year	Begin	End	Feeding Period	Begin	End	Feed Fed	Facilities	Feed Lot Facilities
19								
19								
19								
19	104							
19								

#### VITA

#### Paul Wayne Rooker

#### Candidate for the Degree of

Master of Science

Report: PCTENTIAL ADJUSTMENTS OF BEEF CATTLE ENTERPRISES IN CHOCTAW COUNTY, OKLAHOMA

Major Field: Rural Adult Education

Biographical:

- Personal Data: Born at McLoud, Oklahoma, September 25, 1926, the son of Fred L. and Minnie P. Rooker.
- Education: Attended grade school and first three years of high school in McLoud, Oklahoma; graduated from Oklahoma Military Academy High School, Claremore, Oklahoma, in 1943; received the Bachelor of Science degree from the Oklahoma State University, with a major in Animal Husbandry, in June, 1949; completed requirements for the Master of Science degree in August, 1961.
- Professional experience: Served in the United States Navy from August, 1945, to July, 1946. Farmed near McLoud, Oklahoma, from June to November, 1949. Employed as Instructor in the Veterans' Agricultural Training Program at Depew, Oklahoma, from November, 1949, to June, 1951. Returned to farm. In April, 1953, while continuing farming operations, was employed as Instructor in the Veterans' Agricultural Training Program at McLoud, Oklahoma. Employed by Oklahoma State University, Extension Division, January, 1957. Served as Associate County Agent in the Rural Development Program in Choctaw County, Oklahoma, since that time.