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## Subuitted to the faculity of the Graduate School of the Orlahoma State University <br> in partial fulfillment of the reguirenents for the degree of NBTHR O SCTHCK August: 1961

# POTENTIAL ADJUSTMENTS OF BEEF CATTLE ENTERPRISES IN CHOCTAW COUNTY, OKLAHOMA 

## Report Approved:



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, Wajor Advisor, for his valuable guidance throughout my graduate study.

Indebtedness is acknowledged to Drs. Robert Totusek and Jemes 5. Plaxico for their guidance and for the loan of material used in this study; and to the following for their helpful suggestions and constructive criticisn: Cecil Waynard, Oklahoma State University Extension Sexvice; Daniel F. Morton, Assistant County Agent, Choctaw County.

Further appreciation is extended to $\begin{aligned} & \text { Firs. Joen Frost and } 7 r s . \text { Frances }\end{aligned}$ Branton for their assistance with rough draft typing, and a speciel acknonledgrent to Mrs. Ann Lake for her excellent cooperation in typing the final nanuseript.

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## CHAPMER I

## INTRODUCRION

## 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 ain, it was deened necessary to obtain information from producers in the county on such itens as cattle inventory, por cent of the cattle registered, types of pasture avalable and their carrying capacities, present storage and feeding facilities, amount of labor used for different size herds, the usual feeding ysctices, and the usual marketing program.

Information obtained by the survey was used in identifying needed adjusthents 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 prograns in other counties of southeastern Oklahoma.

Need for the Study

In observing the usual management prectices carried on by eow and celf producers in Choctaw County, indications were that profitable adjustments could be made. It appeared there was a need for more factual
information coneerning, the production of stocker and feeder calves versus Lat slaughter calves or baby beeves. Also possiniluiss of increasing economic returas through improved anakemont proctices in pasture prodution and utilization appored possible.

In this area with over 44 inches antual rainfoll, yields above the averege for the state in both pastures and hay crops ean be olvained rithout the additional cost of irrigation.

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

Wore famers in Choctaw County operate beef eattie than any other eaterprise. Returns fron beef production constitute the najor agricultural income. This importance of the beef enterprise to a large number of farmers in the county adds to the value of this stady.

## Use of Information Obtained

The infomotion and observations in this survey will be usefful in helping the cow and calf producers adjust their prograns toward greater economic returns. Demonstrations of inproved practices by the better producers in different areas and various hord sizes will, perhaps, give the greatest educationel returns.

The reconmended improved management practices, as dotemined through this study, could also be helpíul to county extension morkere, bankers and other lending agencies, feed dealers, vocationa arriculture instructors, and all other persons serving the catt, amon.

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 nanagenent and pasture values, the findings and recomendations could be made available to more beef cattle producers which should bring about increased knowledge to be used in adjusting their individual prograns.

## CHAPTEF II

## HETHODS AND PROCBDURES

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 froa the local veterinarien, sale barn manager, Farners Hone Administration supervisor, bankers, and leading cattlemen of the country.

Develonnent of guestionnaixe

The initial cquestionnaire fora was developed with the assistance of staif rembers of the Department of Agricultural Economics, Oklahoma Stete University. A "pre-test" of the questionaire was performed by intervien of two operators, and the final guestiomaire 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 inculed eighteen producers with different herd sizes. The survey was completed during the spring of 1961.

## sethod of Presenting the Data

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

| Group | Averree Mumber of Cows |
| :--- | :--- |
| 35 and under | 28.4 |
| 36 to 50 | 42.0 |
| 51 to 125 | 68.6 |
| 125 and over | 226.5 |

There were 1 Ive 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 bottor land, it will be show as botton land 8 ac ( 1 ). The 8 acres is the average acres of botton land owned by the five respondents reporting bottom land owned. Where all five respondents are represented in an average, no muber in parentheses will follow. Soth the range and the average size of cow herd will be shown in the tables.

An inventory of all extle on hand fanuary 1, 1961, was obtained from each producer, and this infomation 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. Besults of opinion questions asked the producers have been summaxized and discussed in the section to which they relate.

PRESEMTATON OA SURVEY DATA

## Beef Gatble Inventory

Averoge cow herd size of the beef producers surveged in this stwdy ranged from 20.4 gor the shallest to 226.5 for the largest (Table I), The fers gearling steers corried through the winter are mostly handled by the large operators. Also, large operators have cows that calve morefin the fall as indicated by a 57 per cent calf crop as of January 1.

TABLE I
 BX SLE OF COA HEN MD BY CLASS OF CATTLE

| Clase of Catitle | Size of Cow Herd |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 35 \text { 2 Under } \\ & (28.4) \end{aligned}$ | $\begin{gathered} 36 \text { to } 50 \\ (42) \end{gathered}$ | $\begin{gathered} 51 \text { to } 125 \\ (68.6) \end{gathered}$ | $\begin{gathered} 125 \% \text { Over } \\ (226.5) \\ \hline \end{gathered}$ |
| Cows | 26.4. | 42 | 68.6 | 226.5 |
| feifers |  |  |  |  |
| 2 yr . Replacenent | 1.2 (2) | 2.0 (2) | 12.4.4) | 19.4 (3) |
| 1 yr. Meplacenent | . 6 (1) | 4.6 (2) | 3.0 (2) | 18.6 (3) |
| Steers (Yearlings) | 0.0 | 1.0 (1) | 0.0 | 21.4 (3) |
| Calves (Under 1 Year) | 10.4 | $9.2(4)$ | 18.0 (4) | 130.0 |
| Suls | 1.0 | 1.8 | 3.0 | 9.0 |
| Cows per mull | 28.4 | 23.3 | 22.9 | 25.2 |
| Galf Crop on Hand 1/1/61 (Per Cent) | 36 | 21 | 26 | 57 |
| Per Gent of Roplacement Heifers to Cows | 5 | 15 | 20 | 16 |

Number of cows per bull varies little between different size operators. Small operators save fewer replacement helers. This indicates they purw chase nore of their replacenents.

PABLE II
PER CERT OF REGSTERED CATPLE BY CLASS OF CATTLE AND SIZE OF COU HBRD

| Class of Gattle | Size of Cow Herd |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} 35 \text { \& Under } \\ (28.4) \end{gathered}$ | $\begin{gathered} 36 \text { to } 50 \\ (42) \end{gathered}$ | $\begin{aligned} & 51 \text { to } 125 \\ & (68.6) \end{aligned}$ | $\begin{gathered} 125 \& \text { Over } \\ (226.5) \end{gathered}$ |
| Coss | 25 | 12 | . 6 | 10 |
| Heifers | 11 | 10 | 1.0 | 13 |
| Calves | 17 | 32 | 2.0 | 8 |
| Sulls | 100 | 77 | 73.0 | 100 |

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 guality 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 comercial 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 sinilar to their compercial cattle with only the best being mantained as breeding replacenents for the comercial 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 RESOURGES BY TENURE AND KIND OF LAND OPERATED AND BI SIZE OF COW HERD, TWENTY BEEF PRODUCERS IN CHOCTAW COUNTY

| Land Resources | Size of Cow Herd |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \hline 35 \text { \& Under } \\ (28.4) \\ \hline \end{gathered}$ | $\begin{gathered} 36 \text { to } 50 \\ (42) \end{gathered}$ | $\begin{gathered} 51 \text { to } 125 \\ (68.6) \\ \hline \end{gathered}$ | $\begin{array}{r} 125 \text { \& Over } \\ (226.5) \\ \hline \end{array}$ |
| 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 |  |  |  |  |
| Bottom Land | 12 (1) | 62 (4) | 238 (3) | 836 (4) |
| Good Uplanda/ | 146 (4) | 192 | 350 | 899 (3) |
| Poor Upland ${ }^{\text {b/ }}$ | 80 (4) | 72 (3) | 222 (4) | 8 (1) |
| Other ${ }^{\text {s/ }}$ | 65 | 74 | 139 | 258 |
| Acres of Iand 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.

[^0]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 tof 15 operators rented Iand and the proportion rented was mach lower. The producers who owned a higher per cent of their land usually omed more botton and good upland. This fact was clearly shom 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 eent of their acres were less productive than those in the other groups. The proportion of bottom to total land increased from the mall to the large sige of operations. Usualy, rented land was lower in quality then owned Land.

## Inventory of Feeding and Storage Facilitias

All four groups had adeguate hay storage facilities for present operations and had potential for some expansion. In general, facilities for grain storage are adequate only for present operations. fine 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 avallable for feed lot operation. Four others had fattened calves beyond creen feeding in the post, but their facilities were temporary and no longer usable. Creep feeding facilities were available to sixteen of the respondents.

## Capital Investment

Gapibal investamen information shoms that lerger cor herds tend to have less invested pex cor unit (Table IV). In the group with leas than 36 cous, two respondents hed less then 10 thousend dollors invested. These were predominanty operators of rented land. Less noney was inn Vested in machinemg and rare in cattle by this group. Eroducers nth 36 to 50 coms seened to hevo very close to the same mount invested. Bech onned the majority of his land. Hechinery investment for the group was Texy 20w.

## TA댄 IV

> OAPTTAL THYESTMENR/ SY STGE OF GOH ULRD, TWEWTH ESHE PRODUCERS IN CHOCTAW COWMTY

| thousend 11ars | Size of Cow Herd |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} 35 \text { ? tnder } \\ (28.4) \end{gathered}$ | $\begin{gathered} 36 \text { to } 50 \\ (42) \end{gathered}$ | $\begin{gathered} 51 \text { to } 125 \\ (68.6) \end{gathered}$ | $\begin{gathered} 125 \text { aver } \\ (226.5) \end{gathered}$ | Total |
| 0 to 10 | 2 | 0 | 0 | 0 | 2 |
| 10 to 50 | 3 | 5 | 2 | 0 | 10 |
| 50 to 100 | 0 | 0 | 2 | 1 | 3 |
| 100 Over | 0 | 0 | 1 | 4 | 5 |

a/ Includes land, buildingy, Livestock, and machinery orned. (Woes not inclade rented land.)

The group with 51 to 125 coms varied considerably in theix total investrants. Of the two respondents with lower investments (10 to 50 thousend dollars), one operated rented lend while the other owned rostly poor uplend. The one respondent with ovor 100 thousand dollers invested
owned 2100 acres, and he was in the process of cnlarging his herd extensively. One respondent in the group with 126 or rowe cows was in the 50 to 100 thousand investment category. This rather small investment ror the large sise of herd was caused by his operating a relatively large portion of rented land.

Land Use

The sumary of land use indicated some of the producers tith 50 or Iess cows did not have cropland or hay meadows.

TABLE V
SUMARY OF LAMD USE BY SIZE OF COA HEPD

| Land Use | Size of Cow Herd |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} 35 \text { \& Under } \\ (28.4) \end{gathered}$ | $\begin{gathered} 36 \text { to } 50 \\ (42) \end{gathered}$ | $51 \text { to } 125$ | $126 \text { \& Over }$ |
| Cropland | 10 (2) | 4(1) | 130 | 302 (4) |
| Pasture Improved | 94 (4) | 84 (4) | 158 (4) | 753 |
| Pasture, Umimproved | 122 | 199 | 325 (4) | 519 (3) |
| Pasture, Hoods |  | 32 (2) | 180 (2) |  |
| Preadows, 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 Eeserve |  | 18 (1) |  | 32 (1) |
| TOTAL | 303 | 400 | 949 | 2001 |

The 10 producers in the two smaller groups had only 33 acres for grain and hay production, or 3.3 seres per fam. The two gromp had 178 acres of improved pastwe, or $17 .{ }^{\text {a }}$ acres ner fawn These facts emphasize the Inaibations of entarging or inproving on any existing feeding prograss until adjustaneats in grain, roughage, and pesture production can be nade.


All in the group with 51 to 125 cous had cropland, and 14 arexaged 130 acres per fart. 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 gratin production and feeding prograns could be made. Also, this group hod considerable acreages of rasteland (21 acres per farm) and woodland (10s acres per fom which may add to their economic potential for lend ase edjustments.

The group with 126 or mose cons had fous operators with cropland and two whin large acreages of native meadow. Both land uses total k7l acres wheh is over two acres per cot. This group had 753 acres of improvod pasture, or over three acres per cor. This group was doing a such bettor job or 3 and use mangement.

Thionmation on acreases of pasture by type, length of arming season, and carryine capacities for the different groups is presented in Table WI. The acres in each type of pasture represent the total acres reported by 211 the respondents in each group.

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

MOLE VI



| Pasture ${ }^{\text {atye }}$ | $\begin{gathered} 35 \mathrm{~g} \text { under } \\ (25.4) \end{gathered}$ |  | $\begin{gathered} 36+050 \\ (42)^{5} \end{gathered}$ |  |  | $\begin{gathered} 1 \frac{70}{(68.6)} \\ \hline \end{gathered}$ |  |  | $\begin{gathered} 26 \mathrm{f}+\mathrm{ver} \\ (226.5)^{2} \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Acres l /os, | $\begin{aligned} & \text { hated } \\ & \text { fer } \end{aligned}$ | neres | \%05. | $\begin{aligned} & \text { gate } \\ & \text { ferse } \end{aligned}$ | hares | \% 403. | $\begin{aligned} & \text { Rate } \\ & \text { Per } \\ & \text { Acre } \end{aligned}$ | heres | Hos. Rate |
| Totton Lana Toproved | 40 (1) 7.6 | 6.0 | 20044 | 8.2 | 2.3 | 250 (2) | 9.0 | 2.0 | 1790 (3) | 7.82 .2 |
| Unimproved |  |  |  |  |  | 220 (2) | 7.0 | 5.0 | 1055 (2) | 7.34 .8 |
| fipland - Gooc Inproved | 370 (3) 6.0 | 3.1 | 33012 | 7.0 | 5.0 | 500 (b) | \% | 2.8 | 1985 (2) | 8.0.4.2 |
| inimproved | 190 (3) 6.6 | 4.2 | 600 (4) | 7.0 | 5.4 | 600 | 0.3 | 5.5 | 25\% (2) | $8.0 \quad 8.7$ |
| byland - Foor Tmproved | 100 (1) 5.5 | 3.0 |  |  |  | 30 (1) | 7.9 | 3.6 |  |  |
| Unimproved | 45 (4) 5.9 | 6.7 | 39503 | 5.7 | 6.6 | 4554 | 6.7 | 9.8 |  |  |
| toon Tasture thingroved |  |  | 360 (2) | 3.0 | 5.0 | gno (2) | $7 \times 2$ | 20.0 |  |  |
| mat mantas <br> 子世 0 0 \% | 6. 6 |  | 7.5 |  |  | 30.6 |  |  | 5.6 |  |

 or table.

 farmers.

The 8.0 seres of all type pasturee yer cow wos rather high and secned to be caused by more poor upland being in pastures axd less than one ecre of improved pasture per cow.

In the group with the herd size of 36 to 50 covs, only 420 or 1575 acres (26 per cent) of their pastures were mprovad. With most of their thmoved acres in the bottora, the total pastuxe per cow was 7.5 acres.

The group with 51 to 125 cors had the least awount of ingroved gasture (790 of 3440 total ecres, or 23 per seat). This group also had a total of 900 acres in woods pasture with very low carrying copecity. The woods pasture and poor upland made ap 51 por cent of this groun's svalrble pesture, and large amounts of these pasture typer mandobtedy accounted for the rether large anount of pasture per cow (10 acres).

In the group with 126 or more cows, 3765 of 6360 acres (or 59 per cent) of their pesture was improved. Forty-five per cent or 2735 acres was bottom land and 55 per cent, of 3525 acres, was good uplend. Fo poor untom or woods pasture ans present for this group. These figures show rather clearly that the operators in this group do have better land avallable for theis beef eathle programs than do operstors in the other groups. Oaly 5.6 acres of pasture was needed pert 6. for this croap.

There seened to be very little difference in length of graging anong the four groups. Ghere cattle were held on the same pasturos year-pound, longer grazing periods were indicated. homever, in most of these cases the carrying capacity was lower.

Considerable space in the questionatre was allotied for obtaining infomation on crop screages and production; hovever, only a limited amont of inforiation on these itens was obteined fron the producers.

In the groups with less than 36 and 36 to 50 cows, there ves no grain, forage sorghum, or alfalia hay crops shom as produced. Only one respardont of ach group produced native gross hay. In the group with Iess than 30 cous, two indicated production of legune hay and four indicatod 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 theso two smaner sizo herd groups, only five raised sufficient roughage to aid in a fatteaing progran and none raised grain athough fouz indicated they could.

In the group with 51 to 125 cows, three producers reised seme com, but only one raised grain sorghons and forege sorghuas in the past three gearc. Four indicated they do not raise sufficient grein to aid in fattening their calves while the other respondent only ratsed a portion of the amount nexded. In this group, two had native meedow hay, two had alfalfa hay, three had other legune hay, and two had other grass hay. Indications are that all five of the respondents in this group reised sufficient rougheg or could have it available to aid in a fattening grogrom.

In the group with Rere than 125 cors, three producers hod corm, theee had grain sorghun, and one had samll grains. hen asked if thog raised enough grain to fatten their calves, one answered "yes," two said epsrt of if and two said "no." inree indicated they could have raised enough grain, whilo tro 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 8elt that they were raising sufficieat roughage to aid in a fattening progreas.

## Feeding Fractices

In wost beef herds in Choctaw County, winter feeding starts abozt locenber 1 and ends about April 1. During the eight monthe from April to Decenver,

Iittle ieeding is practiced or needed.
Gperators of difeerent size herds varied liftle in their feeding prow grams. Producers feeding grass hay as wimber roughage averaged Teeding cbout 1800 pounds per cor. When legune hag was used in winter foediney only about 1200 pounds per cow mas fed. In most cases, bulls mere ted abovt onem Pourth nore roughage then was fad to cows, ard yearingg were fed about onefourth less. Seventymive per cent of the calyeg ate heg with the cors or received no hay. Producers with more fell ofves usuelly provided some antre hay for the older calves in the later wintex months.
ill but one of the producers fed sone tyoe protein duxing the winter feeding progran. Annual mounts of protein suppanent per con varad ram 70 to 250 pounds. The Jarger amonts wese fed by the producers foeding a cotton seed neal and salt mixture year-roma. Fhere tegune hay wos used as the main source of roughase, Less protein vas fed. bulls usually received nore protein then did cors due to earlier feeding of thea in the fall and to their more greedy eating habits when fed with the cows.

Stght producers 1 ed 2 to 3 pounds pox cov pex day of a comercial grain cube containing 20 per cent protein. Four xespondents raised grain and fed it to their cons. These operators usually 4 . 3 to 3.5 mounds per day of corneob meal or taize per cos. The other dight producers did not feed grain to their cons. Most bulls were fed from to to 10 pounds of geain per dad for aporoximately 120 days. Usuelly the prodweexs whth more cettle fed the thore liberal apounts of grain.

Sewen of the producers did not feet winexals othex than salb, and fous of these railed to have it available at sll thaes. The thirteen producexs

fed, but they did feel it was important to have it avalable at all times.

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

In the creep feeding operations, the two snaller sise herd groups had seven producers who creep fed and three tho 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 prograns or creep feed sometimes but not every gear.

The producers with the snaller hows tend so follow a sot ranagemeat progran, but the producers of laxger herds adjust their prograns to botex fit their feed supply and market outlook.

The twenty respondents were asked: "If you are not fattening ans of your calves, why? Reasons and the manber of tines indieated are as follows: ${ }^{3}$

Off-fam employnent and lack of time . . . . . . . . . . 6
Lack oĩ facilities . . . . . . . . . . . . . . . . 5
Lack of money and don't want to go in debt . . . . . . . 4
Lack of houe-grown grains ............... 3
roo old . . . . . . . . . . . . . . . . . . . . 3
I plan to when I get fixed (soon) . ... . . . . . . . 3
Feeder calf market the past 3 years too attractive to gemble it . . .................. 1
${ }^{3}$ Sone respondents gave nore than one reason.

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

Results indeated that 80 per cent of the respondents did not raise enoug grain to fatten their calves, 15 per cent raised enough to feed roost of theix calves, and only 5 per cent, or one respondent, raised suificient mounts for factening 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 thimking in terms of creep feeding their calves and not was attening to heavier weights when responding to the question about producing their needed grain.

Pifty per cent of the producers felt they could buy the feed to fetten कheir celves with a profit. Ten per cent indicated they covld buy part of the feed needed, while forty pex cent were sure feeds could not be purchased it a proitt were to be mode in a fattening program.

In general, the prices each producer felt he could pay for verious Teeds ranged very close to present market prices: ear corn at $\$ 1.10$ per babhel, grain sorghua at 1.50 to 1.60 per hundred weight, snd comercial feed mix at froa $\$ 2.50$ to $\$ 3.00$ per hundred weight.

When questioned $i f$ they could provide pasture for calves between veanLhg and starting in a seed lot, 14 respordents indicated they could, three could not, and the other three would soon be able to do so.

ELight producers belleved the practice or grazing their calves on good pastwe between weaning and the feed lot would pay, five producers did not frncir sor sure, and seven felt it mould roit pay.

Bighty-five per cent of the respondents believed they could proritsbly Eatten their calves oa good pasture with grain self-fed.
girteen producers believed that fall calves are best suitad for a fattenine program. The main advantages given for fall alving were:

1. Calves are large cnoug to ubilize pasture to the fullest and will be larger when they go on feed.
2. Usualy, feeds are cheaper when calves are ready to wean and feed in the late sumer.
3. Weather is more suthable for feeding (late sumer through early winter).

Four producers believed that spring culves are botter suited for a fabteming progran. Their reasons for preferring spring calves were:

1. Cilves start out and grow of better,
2. Wo creep feed is needed.
3. Hit best markets (planing to sell in sumaer).

## Labor

Tables VII and VII are used to shom the variation in labor recuired anong grouns with difforent sige of tords. Table VIT shoss the labor required per con fox difierent jobs performed. A definite inverse correlaLion exists between size of herd and amount of labor required. The smallest herd group had the largest total labor per cor of 2.t1 ten-hour days. The next sige herd group had 1.23 ten-hour days per cor, and the largest herd group (126 or arre cows) averaged .74 ten-hour days per cot.

## TABLE UTI



BY SIES OF COW HEWD

| Herd Size | 8 | Average | Average T <br> Feeding <br> Per Cow | Number of 10-1 Mamt. of Cattle ${ }^{\text {S/ }}$ Pei. Cow | Days Repair Maint. a/ Per Cow | All Labor Averase Per Cow | Per <br> 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) |
| 1268 Over |  | (226.5) | 0.29 | 0.36 | . 08 | 0.74 | 61. |

a/ Etimates apply to size of herd and practices as reported in earlier tebles of questionaire.
b/ Includes winter feeding, creep feeding of calves, and any fattening operations reported eartier as "usual" operations.
e/ Includes rovenent of cathe about fam, buying and selling, adrainistering medicines, etc.
a/ Includes only expected anual labor apmied to repair andor anintain livestock facilities. Bxcludes any constructing of new facilities.

Yery litile labor was hired by the gall herd operators rinile, in the Iarger herds, the operators hired a mach hitiser per cent of regared Labor. The group with 126 or more cows hired 61 pex cent of their thbor While the group with 35 to 50 coms hired only 4 per cent.

A number of comparisons can be nade on labor used for dinerent sise cor hords in table VII, Two significant compariscas are the movthly totals per con and the total hours reguired for ench practice under different cice of con berds. The group with less than 35 eows hat a yearly labor use of 11 hours per con for feading while the groap with wore then 125 cors used only 2.9 hours per year per cow. It is interesting to yote the ellyost Rour coms in the large herd size could be handed with the labor used per eof in the small herd size. The small herd size had a labor rogurement per cow of 28.1 hours per year while the large herd sige regoired only 7.4 hours of labox per eow for one year.

One reason for differences in labor needs per cou in durcent size herts is that it takes as mes tine to drive te a pasture to observe 50 on even 100 eow as it does to eheck on 25. In managenent or even reeding, less tine per cow is syent with the larger size herds becuse of the time used in preparation for the various jobs performed.

The ammal repaix and maintenance lohor required per ece trariod eonsiderebly. Tuose with more than 125 cows used ofy 0.9 hour wille those with less than 35 cows used 5.9 hours. Operatore of the larger herds omed better land tith nore productive pastures, thas less fence per cow was needed. Also, the operators of the larger herds teaded to have fonces reguiring less repair and maintenance.

TAgLE VIIT

PRESETP PRACTICES MD BY SILE OF COU HRDOS

| Size of Herd and Practices | AVEACE HOUES O\% LAEOR WI MOMTHE PRE CROEP |  |  |  |  |  |  |  |  |  |  |  |  | Totals Per Cow |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 35 \% Under (28.4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Feeding | 44 | 43 | 40 | 18 | 16 | 16 | 16 | 14 | 17 | 19 | 32 | 40 | 315 | 11.0 |
| Higat. of Cattle | 22 | 24 | 28 | 28 | 26 | 26 | 25 | 26 | 30 | 28 | 28 | 26 | 318 | 11.2 |
| Repair-saint. | 17 | 15 | 27 | 13 | 10 | 8 | 8 | 8 | ह | 10 | 28 | 25 | 167 | 5.9 |
| TOPAL | 83 | 82 | 85 | 59 | 52 | 50 | 50 | 48 | 55 | 57 | 88 | 91 | 800 |  |
| Per Comr | 2.92 | 2.88 | 2.99 | 2.07 | 1.83 | 1.76 | 1.76 | 1.69 | 1.83 | 2.00 | 3.09 | 3.20 | --- | 28.1 |
| 36 to $50(42)$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Peeding | 36 | 36 | 32 | 13 | 14. | 12 | 14 | 12 | 14 | 12 | 23 | 34 | 258 | 6.0 |
| Hgat. of Gatie | 22 | 22 | 22 | 24 | 21 | 20 | 21 | 20 | 22 | 28 | 2 c | 25 | 276 | 6.5 |
| Repair-kint. | 12 | 10 | 14 | 13 | 13 | 13 | 12 | 8 | 18 | 12 | 12 | 14 | 151 | 3.6 |
| Toral | 70 | 68 | 68 | 50 | 48 | 45 | 47 | 40 | $5 \%$ | 52 | 63 | 74 | 679 |  |
| Per Cow | 1.66 | 1.61 | 1.61 | 1.29 | 2.14 | 1.07 | 1.21 | .95 | 1.2\% | 1.23 | 1.50 | 1.76 | $\cdots$ | 16. 1 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Reeding | 56 | 56 | 48 | 22 | 10 | 14 | 10 | 14 | 10 | 16 | 36 | 46 | 338 | 4.9 |
| Pat. of Cathe | 36 | 36 | 38 | 34 | 24 | 26 | 26 | 25 | 26 | 32 | 42 | 40 | 386 | 5.6 |
|  | 10 | 6 | 24 | 12 | 4 | 4 | 6 | 6 | 6 | 10 | 12 | 20 | 120 | 1.8 |
| TOTAL | 102 | 98 | 110 | 68 | 38 | 4.4 | 42 | 4 | 42 | 60 | ged | 106 | 84 |  |
| Per Cow | 1.48 | 1.42 | 1.60 | . 99 | . 55 | . 64 | . 61 | . 6 | . 61 | . 8 | 1.13 | 2.54 | -- | 12.3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Feeding | 112 | 11. | 112 | 34 | 26 | 26 | 27 | 27 | 25 | 31 | 36 | 94 | 662 | 2.9 |
| Nigat. of Catile | 62 | 62 | 76 | 50 | 66 | 72 | 72 | 76 | 76 | 80 | 64 | 6 | 830 | 3.6 |
| Sepair-matat. | 14 | 22 | -30 | 228 | 104 |  | 111 |  |  |  | ${ }^{14}$ | 276 | $\begin{array}{r}806 \\ \hline 896 \\ \hline\end{array}$ | . 9 |
| Somer 60 | .83 | 196 .86 | 220 .97 | . 214 | . 104 | . 112 | 117 | 115 .50 | . 123 | 127 | $\underline{114}$ | .76 | 1698 | '7.t' |

Tarketing Prectices

Wome aspects of the marketing program separted by four groups of beef cattle producers in Choctar County are pregented in Pable Ix．

TMEL IX
O2 WBET PKODHOWRS TR CHOCTAN COUNTY

| Wazketing Fromram | $\begin{gathered} 35 \text { Bnder } \\ (28.4) \\ \hline \end{gathered}$ | $36 \text { to } 50$ $(42)$ | 5140125 <br> （68．6） | 126 8．Over （226．5） |
| :---: | :---: | :---: | :---: | :---: |
| Avg．Ages of Galves Sold | 7.3 㸚。 | 8.3 \％0． | 6.6 50． | 6．2） |
| Avg．Weight－Steers | 473 采 | 4724 | 4314 | 476 |
| AvE．weight ceiters | 4.578 | 4447 | $607 \%$ | $450 \%$ |
| Avg．Ages Gows 3oLd | 10.4878. | $31.3 \mathrm{ya}^{2}$ ． | 11．2 \＃ne． | 11．0 $\mathrm{yz}^{5}$ |
| Avace helght－Cows | 925 | $780 \frac{1}{6}$ | $870{ }^{4}$ | 955\％ |
| Avg．Age Sulls Sold | 5.6 yrs | 7.2 yrs ． | $6.5 \mathrm{yrs}$. | 8.0875 |
| Locetion of Paticets |  |  |  |  |
| Calves |  |  |  |  |
| Central | 1 | 0 | 0 | 3 |
| Docally | 4 | 5 | 5 | $y^{2}$ |

a）Portions of the ealves from the cow herd group 126 s over vere marketed direct to feedex buyers and delivered locally．
athe ages and weights of both cous an ealren reported in each of the different herd size groups were similan．

The groap with 51 to 125 cows sold thelw calves at youncre ages then did the other three groups．Three of the reapondents in the 51 to

125 cow herd size had their herd calving year-rown; therefore, their calves were matreted throughout the year.

Eulls in the larger gize herds were kept longer, indicating the practice of rotating bulls within the herd, whereas the bulls in madiar herds were replaced wore opten.

Local markets were used almost exclusively by the com axd coll opergtors thiroughew Choetaw County. One respondent in the group with less than 35 cows did mavet part of his calves in he contrel werket in oriohom City end some of the respondents with more than 125 eows sometines murketed direct to feeder buyers. Righty-ive per cent of the herde reportm ing were predominanty ferefords while only 15 percent were Angur. Local mrkets tended to discriminte against black calves, thus two of the three Angus breeders attempted to market either direct or at central markets.

Older cows wexe lighter in weight when narteted. Tho group with more than 125 cows sold the heaviest cows at 955 pounds.

Adjustment Problens and Possible Potentials

Additional information obtained while interviemine the twenty producers regarding age and occupational status of each respondent secried simifieant ther considering proposed changes in managenent practices.

Of the inve respondents in the 35 and under cow herd grour, two ware over 55 years of age and dran retirgment checiss, two were less than 45 years of age and were employed full time off the rarm, and one was betreen 45 and 55 years of age and devoted 135 ten-hour dags to his gand herd of 35 covs. The latter operator's wire was a shool tegeher and provided
off-farm income needed to supplement the incone from the mall cattle enterprise. The 135 ten-hour days show by this small operator raised the ayerage labor requirenent for this group considerably.
of the five respondents in the group with 36 to 50 cows, two were over 35 Jears of age with one rotired and one eaploged full time, one was 15 to 55 years of age and was receiving additional incone trom the conserretion reserve progran, and two were less than 45 years of age and huli-time enployed off the farm. Indications were that one of the younger respordents in this group had hopes of enlerging onourd to be able to cease working of the farm, while the others anticipated little change in this respect.

Of the five respondente in the group with 51 to 125 cows, two were 55 pears of age. One of these did custom hay baling for additional incone while the other raised crops for eash. The other three respondents were wher 45 years of age, ard each raised crops for cash. One of the three hed a part-time farm insurance agency. One other was full-tine enployed and the other relied on fara income alone.

Of the five respondents in the group with 126 cows and over, two were between hty and 55 years of age. One had additional income from ean erops and the other sold sone hay and received incone from conservation reserve pryments. The other three producers with the Iarger size herds were wher hy years of age. One of these was employed full tine (vice president of a bank). One bat some cash crops along with a small business. The other young producer had cesh crops and was the only respondent with Encone fron a feed lot anterprise.

Since cowercial feeding of calves in Choctaw County could be possible in the future, the following question was asked: "If a comercial
feed lot vas available locally, tould you be interested in using it? Wight of the respondents indicated derinite interest, six were not interested, and six were interested in the costs betore deciding. Three of the six who were not interested were over 55 years of age, one was creep feeding his calves and selling çulity fat colves. One indicated he would have to japrove his guality before he would be interested, and the other producer who vas not interested was feeding his calves now.

Seven producers fed no minerals other than salt. According to Morrisors, pastares grown on phosphorus and calcium deficieat soils may cause serious results in livestock unless this deficiency is corrected. ${ }^{4}$ Galcium and phosphorus deficient soils are comon in Ghoctan County, especially on the poor upland soils. In most casea where a farm opsetor fails to feed minerals to his livestock he usually does not have a good fertilization rogram. In this case all seven producers feeding no mixerel. other than silt operate more poor land with relatively low yielding pastures. This practice of feeding complete minerals along with selt indicateo rather clearly the need for sone adjustanats in sven minor manageaent practices in the production of beef catile in Choctaw County.

Of the producers with less than 35 cons, two believed their opergtions were too small for feeding to be profitable, one indicated it would taie too much time, one said he wonld enlarge and try feeding ix he tere pouger, and one stated it would be best to feed his calves until they were about 12 to 15 months of age. The Lattex individual stated he could use a masiman of pasture and a minmum of grain and produce an 500 to 1000 pound Jearling very geonomicalys.

4ranik 1. Horrison, Feeds and Feeding (22nd ed. Clinton, Ions, 1956), p. 95.

Of the producers with 36 to 50 cons, three indicated that offfam enploment left too listle tioe for developing and operating a feeding grograx, one producer said health and age prevented hin frow Seeding, and one felt that creep feeding the cals up to 8 or 9 months could produce baby beeves at more profit then selling lighter feeder clyes.

Of the producerswith 51 to 125 covs, tro said age kept thea from fatteniag their calves, one indicated he could make more money creep feeding his type calves and selling then as fat slaghter calves than he could by selling lighter feeders, one beliewed that foed with pasture was perhops the best profit moker, and one believed he could thereese bis thome gost by raising the feed and fattening all his colves.

In the group with more than 125 cows, three belteved it paid to Tathen at least part of their calves (heifers, lightweight calves, and better dazity calves) as long as they reised their om feed. These three planed to feed more as they becane able to raise more grain. One Findicated he could not raise his ow grain for feeding at hone but he could meke moxe prortt by feeding his calves through a connercial reed lot than he could $0 y$ selling as feeders. One other believed that if heifer and steer price spreads renain over 24 per pound, he could more profitably feed the heifers.
only one respondent indicated no adjustents should be aede in his present livestock prograu. fivenced age and health sconed to be reasons for this producer being satisfied. Indicated gdjustments needed

W number of responses given by producers were ts rollows: Thprove pastures . . . . . . . . . . . . . . . 13 or 55\%

Adjuse seading programs . . . . . . . . . . 10 or 50 g
Whate aduatments in breeding prograna . . . . 9 or $45 \%$
Improve breeding stock . . . . . . . . . . . . 8 or $40 \%$
Ghcrease herd aize . . . . . . . . . . . . . \& \& 20 多
need bettar help . . . . . . . . . . . . . . 1 or 5 \%
Sowe of the reasons given for these needed adjustnonts wert carry
aore catile per acre, better pastures will decrease feed costo, can better utilize pastures, can sell heavier calwos, and Layroved puality increases income per call.

## GRAPTRE IV

## POTNATLAD OF SELECTED KIOS OF ADJUSTMENTS

Some of the need for adjustments in the management of beef cattle enterprises in Choctan Gonty were identified by analysis of information Irom 20 producers. Adustment needs indicated by a high ger cent of the responents in the survey were improvement of pastures and change in feeding progreas. Becanse of their importance to the beef producers of the county, these two adjustrant needs were selected as examples for use in denonstrating possible economic returns from the improvements.

## Pasture Development

Pasture is the foundation of economical beef production; it comonly furnishes much cheaper feed than harvested cxops. 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 profite much reduced. ${ }^{5}$

Cvor 52 per cent of all pesture land used by the twenty respondents in the survey was minproved. This indicated that fermers in Choctars County did not alwas recognize the productive potentials of pastare, and many geve little attention to portions of their pastures.

In recent years advancenents haye been made in zany areas of the

$$
{ }^{5} \text { Ivid., p. } 731 .
$$

state in the general adoption of pasture improvement practices. In a surver conducted in southeastern Orlabona, potential production for improved pastures with awerege managenent practices were as follows: 6
Tye of Lend Acres Needed Per Animal Unit
Bottom 1and . . . . . . . . . . . . . . . . . 3.0

Cood upland . . . . . . . . . . . . . . . . 3.4
Poor upland . . . . . . . . . . . . . . . . . 4.8
At these mates, a surplus in hay can be obtained during periods of lush groath to use for wintering the animal units as indicated. These grazing rates were used to estinate the potentiol production of afferent kinds of land in Choctar Country (table X).

Caparisons of reported pastare yields to potentials availeble under average managent practicos indicate much inprovement is possible. The relatively low production from the uminproved pastures suggests thet Haproving these pastures to than econome potential maf provide the major possibility of increasing incone foon apef production in Groctaw Connty.

Costs and returns from inproving the uninproved pastures in different com herd sizo groups were estimated as show in Pable XI.





a) Rate refers to the number of aeres to carry one mature minal for the ronths indicated.

3/ Determined from data presented by Eack and Furt, (in process of publication, 1961).

TABLE XI




| Size of Cow Herd Pasture Type | Presenta | Potential ${ }^{\text {/ }}$ | Increase | Cost of Increase | Betarre from <br> Increase | ins Incone |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Less than 35 Cows: |  |  |  |  |  |  |
| Good Spland Thimproved | 5.09 | 8.37 | 3.23 | 446.68 | 230.42 | 91.74 |
| Poor Upland Onimproved | 6.53 | 13.92 | \%. 39 | 343.54 | 597.15 | 193.68 |
| mote | $x \mathrm{x}$ | 8 | 10.67 | 490.22 | 775.60 | 285.38 |
| 36 to 50 Cows: |  |  |  |  |  |  |
| Cood Upland Unimproved | 12.96 | 26.47 | 13.51 | 463.20 | 982.04 | 518.6 |
| poor upland unduproved | 5.68 | 12.15 | 6.50 | 304.94 | 472.43 | 167.54 |
| TOTAL | $x$ | xer | 20.01 | 758.14 | 14.54 .52 | 640.38 |
| $2 \operatorname{to} 125$ Cows: |  |  |  |  |  |  |
| Sottori Land Unimproved | 5.13 | 10.98 | 5.8\% | 169.8. | 425.96 | 256.12 |
| Cood Upland Unimproved | 17.09 | 30.00 | 12.91 | 524.86 | 900.43 | 375.15 |
| Foor Upland unimproved | 9.74 | 26.71 | 16.97 | 660.06 | 1222.03 | 561.97 |
| TORAL | $x$ | Xex | 35.7\% | 1354.66 | 2548.40 | 1193.54 |

TABLE XI (COMTMUED)

| $\begin{aligned} & \text { Size of Cow Herd } \\ & \text { Pasture Type } \end{aligned}$ | Presenta/ Rate Potentina/ Increase |  |  | $\begin{aligned} & \text { Cost of e/ } \\ & \text { Tacrease } \end{aligned}$ | Return from | Incone |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 126 or Vore dows |  |  |  |  |  |  |
| Sottom Land tramproved | 26.74 | 52.75 | 25.01 | 914.46 | 1890.67 | 1076.21 |
| Good Upland Untimproved | 23.90 | 63.62 | 44.92 | 3204.32 | 3265.23 | 2060.91 |
| 20nte | xx | xx | 70.93 | 2018.78 | 5155.90 | 3197.12 |

a) Anmal unts grazed nine months as related to pastures show in Teble VI.
b/ Potential animal units grazed nine months ss showa in reble $X$.
c) Cost of increase was figured 34.33. क6 per acere improved. Inprovenent of pastures included: preparing seed bed, application of 2 tons lime per acre, sprigring Bermuda grass, fertilizer cost and cost of application, discing or harrouing, and clovers and lespedezs cost plus secding. The average cost per acre of this establishment program in Choctai County as figmed by the arricultural Stabilization and Conservation Office is:
Thtal Cost - $\$ 38.00$; Agricultural Bonservation Program Payment - 22.60 ; parmer Cost - 05.40 . these cost figures thelude all expenses othor than depreciation of equipaent and are very similar to establishnent costs as reported in previonsly mentioned surveg. It is felt that the intial establishment will last 12 yeare and the establishaent cost anortized at gotinterest for this period anounts to 4 . 6 da per acre per year. An annusl charge of 8.02 pex acre for fertilizer brings the total cost per sere per year to $\$ 3.06$.
g/ Return per con figured at 77.69 as determined by Dek and hurt, (in process of publication, 1961).
of Wet returns to labor, forego prouction, pature, and nangement.

Developnent of all unimproved pastures to their potential production under average managent practices could give a tremendous increase in incone to the beef cattle producers in Choctaw County (Table KII).

## TABLE XII

| SUMARY OR INCREASHD INGCAE POTEMTIAL BY DEVELOPIMG UMMPROVED PASTURES, AVERAGE HARAGENTM PFACTICES |
| :---: |
|  |  |
|  |  |


| Present Herd Size | Potential Cow Increase | Potential Met Incone Increase ${ }^{\text {a/ }}$ |  |
| :---: | :---: | :---: | :---: |
|  |  | Per Herd | Per Cow |
| $35 \%$ under (2e.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 Cors) | 34.34 | 1325.60 | 34.62 |

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

The average size herd for the twenty producers in the survey wes 91. 3 cors. They could increase the carying capecity of their faras by 34.34 cows juet by developing their unimproved pastures to their potential under average management practices. However, gratly increased capital investnent per farm would be necessary to develop the pasture and increase the cow herd by this potential. Hy raking this increase in investment, income to labor, management, pasture and bey production per
hert would increase by about 1325.60. With assumed continuation of current feeaing proctices that include very little grain and protein, the income irom this increased soughage production would be very hieb per fam. Boditional increments in incoae could be expacted with ehange in reeding practices with respect to grain and protein.

Developant of 100 ger cent of these uninproved pastures to their potential probably connot be accomplished under prosent distribution of property rights. Operators are unlikely to establish permanent pasturen on rented land. Ajso, it the larger operators establish improved pasm bure on a large number of acwes, the Agricultural Conservation payments wonld be a limitation. Gumenty, there is a limit to how akch the Agricultural Conservation Fogran will asctst any one farmer. However, regardless of the limitations, kuch pasture develoment could take place in Choctak County.

## Feeding Adjustments

Fifty per cent of the beef producers surveyed in Choctam County indichtod that adjuctants were needed in their feeding practices. Nu actual teeding practice carried out by one of the responaents is oresented in rable XIIX. Catte fed by this operator were heifer caives out of first-cal heifers that were too light to sell at the nomal marketing time and were thas "cerried overi and fod later. The miter recognises that these lightweight heifer calves (28s pounds) are far balow the averege ( 439 pounds) xported int the survey. Rowever, because only in this eroup was complete information available, this feoding prograna was used as an example.

Information on the producer's practices and results is as experienced in rospect to weights and feeding mounts. The weights were obtained through a performance beef testing protram. The producer had homemgrom grains ground and mixed, and he wss able to keep accurate records on feed used.

The record on 20 heifer calves wes as follows: Far tago wexe pleced in each calf's ear st birth and the dates were recorded. These birth detes wore averaged and figured as December 24,1958 . In neasuring production of the cows, each calt was wcinged on wuly $4,1959$. These weights at seven monthe of age averaged 28 g pounds. Following weming on July $2 h_{\text {, }}$, the heifers were maintuned on Bemmeda grass pesture until fovenker 15 when they started receiving four pounds of ground ear com per dey. On December 15 they were started on rixed alfalfa-johnson geass hay at the rate of six pounds per day. This feeding was maintained uatil April 15, 1960, and they consuned a total of 600 pounds ear com and 790 gowns alinh ${ }^{2}$ - Johnson great mixed hay. Sixty pown of a 22 per cat grotoin supplemen and 20 pound of comblete mineval were zed during the Jear. On April 15, the heifers were again pleced on good Bemwde grass-Johnson grass-lespedega pasture ofth one yearling to each 2.5 acres.

On notobcr 26, the heifers were taken oft pasture and placed on dry 1ot ceeding. At that time they woighed 650 pounds. The heifers were just over 22 nonths of age at that tine. The dry lot foeding retions consisted of 90 per cent ground com cob meal and 10 per cent comercial supplement with 32 per cent protela. Whth the price of com at \$7. 70
per bushel, the price of protein supplenent at h.00 per 100 pounds, and a cost of 35 cents per handred for frinding and mixing grain, the total grein sation cost was 2.79 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 Pebruary 1, 1961, at an average of 871 pounds. They gatned 221 pounds for the $97-$ day 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.

GABLE XIII

##  

| Averages | Data | Cost or Returns | $\begin{aligned} & \text { Net } \\ & \text { Values } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| Sirth Date | 12/24/58 |  |  |
| Mesnigs |  |  |  |
| Date | 7/24/59 |  |  |
| Weight | 288 Lbs. |  |  |
| $\begin{aligned} & \text { qualue } e^{622.70} \mathrm{~b} / \\ & \text { ger } 100 \frac{3}{7} \end{aligned}$ |  |  | \% 65.38 |
| Eastuxe Charge ${ }^{\text {c/ }}$ |  |  |  |
| 7/24/59-11/15/39 | 110 days | 3.08 |  |
| 4/25/60-10/26/60 | 190 days | 5.32 |  |

Feed Per Learling Heiferd
Grain
$11 / 15 / 59-4 / 15 / 60 \quad 600$ 1bs. 11.10
解ay
12/15/59-4/15/60
72010 s.
6.50

Protein Supplement
frow Veaning to
60 lbs.
2.40
seed Lot
Complete anerals
fron Heaning to
20 lbs.
.60
Feed Lot
beight
10/26/60 65047
Value $100^{418.42} \mathrm{~g} /$
per
119.73
90.73

TABLE XIII (CONTINUED)

| Avereges | Data | Cost or Beturns | $\begin{aligned} & \text { Vet } \\ & \text { Values } / 2 \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| Feed in Dry Lota/ |  |  |  |
| Grain Ration for 97-Day Feeding Period | 1613 lbs. | 35.33 |  |
| Hey for 97-Day Feeding Period | 388 1bs. | 2.91 |  |

## Sale

| Date | $2 / 1 / 61$ |
| :--- | :--- |
| Weisht $t^{e /}$ | 871 lbs. |


\&/ Net incomes are returns to labor, managenent, and cor cost.
b/ Values placed on the heisers at their different weights, gredes and dates involved were obtained by averaging priees reported in the Livestock and Reat Statistics Bulletin Mo. 230 and Supplenent for 1959 to Statiseticel Bulletin Ro. 230.
c/ Pasture charges are figured at $\$ 20.40$ per animal wint yer gear as reported by T. E. Tramel and D. 隹. Parvin, An Esonomic. Appraisal of Beef Cattle Eroduction in Northeast and Easi Cons tral Mississippi, Agricultural Experinent Station Eallctin ${ }^{\text {B-497, }}$ (Aississippi State College, 1953), p. 14.
d Feed prices were: Corn - \$1. 10 per bu.; Commercial protein supplenent - 44.00 per 100 青; Hat - 18 per ton; Grain fed yeartings - $\$ 1.85$ per 100 and coaplete minervis - 3.00 per $100^{4}$. Amounis 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 progran is illustrated in Table XIV. The same type calves were used in the proposed and actual feeding prograns to give better comparisons. The fitst possible adjustment in the actual feeding progran is change in the weaning weights of 288 pounds at seven anths of age. These weights are extrenely light conpared to the averages of 439 pounds for all heifers reported in the survey. Various factors influence the need for ereep feeding. It has been said, "Creep feeding is wore apt to be profitable if the herd consists of numbers of first-calf heifers cr old cows, if drought or mud reduces the forage available as winter pasture, or if the spread between standard or god and choice grading calves is considerable." ${ }^{7}$

Tears ago, beef cattle usually were two on three years of age before they mere fattened for market. Now, the cattle raised for beef are genm erally fattened as they grow. Such cattle are fattened for marketing at 10 to 18 months of age as "baby beeves" or "tat yearlings." Some are even sold for slaughter at weaning tine or soon afterwards as "heavy fat calves. ${ }^{8}$

Horrison 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 rether small cuts of beef and beef which is tender and has a minimum of waste fat, and (2) cattle fattened when gowng produce thet more economical gains than those which are older.

7roscoe Th. Snapp and A. I. Mermann, Beef Cattle (5th Edition, Now work, 1960), p. 522.
*iforrisozi, p. 692.
9 tora.

TABLE XIV

PROPOSED FEEDING PROGRAM FOR HEIFERS

| Averages | Data | Cost or Returns | Net ${ }_{\text {Nalues }}$ / |
| :---: | :---: | :---: | :---: |
| Birth Date | 12/24/58 |  |  |
| Weaning |  |  |  |
| Date | 8/24/59 |  |  |
| Weight ${ }^{\text {a/ }}$ | $401 \mathrm{lbs}$. |  |  |
| $\begin{aligned} & \text { Value © } \$ 23.90 \\ & \text { per } 100 \# \end{aligned}$ |  | 95.84 |  |
| Greep Feed |  |  |  |
| At $\$ 2.50$ per 100\# | $\begin{aligned} & 183 \text { days } \\ & 628 \text { lbs. } \end{aligned}$ | 15.70 |  |
| Calf Minus Creep Cost |  |  | 80.14 |
| Pasture Charge |  |  |  |
| $8 / 24 / 59-10 / 24 / 59^{\text {b/ }}$ | 60 days | 1.70 |  |
| Feed on Pasture ${ }^{\text {e/ }}$ |  |  |  |
| $8 / 24 / 59-10 / 24 / 59$ | 60 days |  |  |
| 5\# Grain Sorghum per day | 300 lbs. | 6.00 |  |
| Complete Mineral | 3 lbs 。 | . 10 |  |
| Gain on Pasture ${ }^{\text {/ }}$ | 84 lbs . |  |  |
| Weight, $10 / 24 / 59$ | 485 lbs. |  |  |
| Value © $\$ 22.70$ per 100\# |  | 110.10 |  |
| Calf Value Pasture Gain Cost |  |  | 102.30 |

## TAELE HIV (COWTMUED)

| Averages | Data | Gost ox <br>  | $\begin{gathered} \text { wet is } \\ \text { Values } \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| Peed in Pry Lot ${ }^{\text {d/ }}$ |  |  |  |
| Crata Ration for <br> loo-Dey Feeding <br> berice, 14.3F/Day$\quad 1430 \mathrm{lbs} . \quad 31.32$ |  |  |  |
| Rey for 100-Day <br> Feeting Period, <br> $2.16 s$. per Day$\quad 200 \mathrm{lbs} . \quad 1.00$ |  |  |  |
| Sule |  |  |  |
| Dete | 2/3/60 |  |  |
| Veight | 705 Ibs. |  |  |
| $\begin{aligned} & \text { Talue } 680.50 \text { e/ } \\ & \text { per } 100 \% \end{aligned}$ |  | 244.53 | 110.50 |
| 3) Morrison, p. 737, reports expected additional gains per day fron creep feeding are .38 with 1.50 pounds per dey averoge for non-creep fed calves. Grain used is 9.03 Ibs. per pounc of gein. Creep fed calves were worth 4.21 more per hundred weiget at weaning tine. |  |  |  |
| b/ Same as c/ in Table XIII. |  |  |  |
| c/ W. C. Elder, Wayne W. Huffine, and Byron W. Lake, Pasture Management and Forage Crop Production Studies; Progress Beport, |  |  |  |
| d/ Information on feed lot gains, feed needs, and othex relatad data on this type was obtained in Rorrison, p. 717. |  |  |  |
| e/ Values placed on the heifers were obtained in the Livestock an Meat Statistics Bulletin wo. 230 and Supplement for 1959. |  |  |  |
| i/ Let incomes | ns to labo | anagenent a | cost. |

Becouse of the light woaning weights in the actual feeding prowgram, it was proposed to crecp feed the calves. Beverathonc is conm sidexed an early weaning age with these tyo colves; thus, calves ware weaned at eight months in the proposed plan. The pasture seeding on grass gives an additionel profit in the proposed plan. It appears that the calves may nake more profit for the producer it scld at this thme off pasture and grain. Only 6.20 additional income for labor, risks, and racilities was obtained from the 100 -day feeding period. If grein were high in price, one may not teed in the dry lot; but if grane wexe gleatiful and cheap, returns sould be higher by dry-lot eeding.

Wet returas at weaning in the two seeding plens wore $\$ 65.30$ for the actuel and 860.14 for the proposed. The actual program had a $\$ 90.73$ por head value at 22 months of age while the proposed progren gave a 402.30 calf at 10 months of age.

Adjastmeats on manegement practices other than pastume develogaerit and reeding could give further economic returns. Calwes conla be grouped for nore effective marketing by adjusting the breeding progams. Bettex sires could give imediete increases in selling price per pound in rany beex herds in Choctew County. Other adjustnents could be profitable in both leeding and pasture prograns. Grester ubilization of axisting pasm tures by fotation grazing, moring, and other practices would five additional incone with little expense to the operators.

## GAPTER V

## SUNHET AND CONCLUSTOMS

The major objective of this study was to detersine is and how the beer cons and calf producers in Goctaw County could adjust their operstions ror greater economic returns, A survey of 20 producers was conducted to provide basic data for the stady. Producers included in the sample were selected to represent swall to large size herds and different areas of the county. Problens and linitations to potential adjustaents such as age, health, and available time were obtained in sowe interviews.

After completion of the surveg, results were tabulated and presented by different cou herd size groups. Conparisons were made bebreen groups in the discussion of data.

Large operators practiced 1 all 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 regism tered cows to produce replacenent breeding bulls for their comercial herts.

Fhore small size producers rented a higher per cent of their land. The maller producers used their cattle enterprise as additional incone to their off-fam jobs. Larger producers omed a higher per cent of good upland and bottom land than did the smaller size groups.

Storage facllities were adequate for roughage but lacking for grain.

Guace was whaportant, onty one of 20 producers had feed lot pacilities. सaghty per cent of the operators ho creep feeding facilities. investacnt fer cow decreased as the size of the herd increased. Hore reabed land allowed lover investment per cow. Sperators with sincl hords invested nore in the cow unit and less in ractinery then dse the lavger oneratozo.

Percentriges of eronand and hay production decressed math decrease
 ture ver cor waied fron 5.6 to 10.0. Wore pabures on som 1and trere zomoved that was tho case on poor Zand.

Huter feeding started about Decenber 1 and endec alout April 1. Teeding prograws dffered 1 titile botwen tifferent size herds. Farmere who ratsed grein tonded to read more grafa. Stall herd oparators with

 werintion in feed pxices.

Considerably nore labor was used per cor tre the smull sien hemds.
 nemded for one cow in the gadiest stae hert. Less pasture acreage per cen contwbuted to leas pacing por con for the larger oparations. Targe hert operators hat bettor fonces ant, thereforg, loss maiatcnance costs. Shall aige operstore dired little or no Iabor whio the laxget




twewty buled his calves to a central maret in 2960.
Results of thin study indicated hhat adjustments in operabions heve potextial for increasing sconomic retume to the beet producers in Ghoctear County. The survey results indicated further that any fawaers in the county did not always recognize the econowic poiential of pesture inprovement. The writer believes that inproved pasture manageaent can convribwhe sore toward increasing income to the beef producese of the cownty than any other single adjustonent.

Production of "baby beeves" or "fot yearlings" should give grestor conouic returas than present programs. Feeding calves to heavier weighs will not be a matjor beer enterpxise until sore fraitr is producen is the area.

Age, health, limited time bocause of off-fram emplogment, and fear of going in debt are sone of the factors limating the expension and adjustment of many beef producers in Choctan County.

Results of denonstrations on inproved managenent practices could dispel the fear sone operators have of going in debt, and also they could have an influence on lending agencies of the possible econoric potemtials to various size of operations.

Winneteen of the 20 respondents in this survey recogrized that adjustants should be made in their operations. Six different needed changes were listed a total of 33 times. The uriter concluded froat this ifronation that most beef producers realize they need to adjugt thar nanagement prograns. Most operators know which adjustuents need to be made. Worivation of the producers and the required increase in capital investmeth seen to be the big ; whlens. Deanstrations of improved manageant proctices by the better overators in atiteront areas and various herd sizes mill, perbags, provide the gacaten getivating induence.

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APPENDIX

## APPGMIX

## OURSTIOMATRE

## Gow and Calf Eeef Catile Prograra <br> Choctan County, UREhowa

Wema mubex $\qquad$

## Land Description

1. Fotton Iand $\qquad$ Good Upland $\qquad$ Poor Upland
2. Qropland - Pasture Improved
 Pasture Unimproved $\qquad$
3. Euctovs, Wative $\qquad$ Fasteland $\qquad$ Wloodland $\qquad$ Farmstead
$\qquad$ Land Mented $\qquad$ Total Land $\qquad$

Total Capital Investment:
(1) 110,000 to 50,000

Includes Land, Buildings, Livestock \& Lachinery
(2) 550,000 to $\$ 100,000 \quad$
(3) $\$ 100,000$ over $\qquad$

Crop Acreages and Production

|  | ACRES PLAMTET |  |  | PWODUCTION/ACER |  |  | $\begin{aligned} & \text { AVRAGB } \\ & Y I E I D / A C R E \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1958 | 1959 | 1960 |  | 1959 | 1960 |  |
| Corn |  |  |  |  |  |  |  |
| Grain Sorghums |  |  |  |  |  |  |  |
| Forsge Sorghms |  |  |  |  |  |  |  |
| Small Grains |  |  |  |  |  |  |  |
| Wative Meadom |  |  |  |  |  |  |  |
| Hay Crop Alrallo |  |  |  |  |  |  |  |
| Hay Grop Other Legumes |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { Hay Crop - } \\ & \text { Grass } \end{aligned}$ |  |  |  |  |  |  |  |

Usual Pasture Use and Grazing Rates:

| Fype Pasture | Acres | Length of Grazing | Namber of Animal Onits |
| :--- | :--- | :--- | :--- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Inventory of Beef Cattle: (Jamary 1, 1962)

| Type Cattle | Conmercial | Registered | Total |
| :--- | :--- | :--- | :--- |
| Cows Spring Calving |  |  |  |
| Cows Fall Calving |  |  |  |
| Replacenent Eeifers |  |  |  |
| Yearling Relfers |  |  |  |
| Yearling Steers |  |  |  |
| Sulls |  |  |  |
|  |  |  |  |

Usual Feeding Practices Per Head:

| Kind of reed | Cows | Calves | Yearlings | Others |
| :---: | :---: | :---: | :---: | :---: |
| Hay: |  |  |  |  |
| Kind |  |  |  |  |
| Dates Fed |  |  |  |  |
| Los, per bay |  |  |  |  |
| Dbs. per Jear |  |  |  |  |
| Other Foughage: |  |  |  |  |
| Gind |  |  |  |  |
| Detes Fed |  |  |  |  |
| Ibs. per Jay |  |  |  |  |

Moual Fecdins Bractices Mex Feod (Contimued):

| Stina or peed | Coss | Calves | Yearlings | Others |
| :---: | :---: | :---: | :---: | :---: |
| Crains |  |  |  |  |
| Rind |  |  |  |  |
| Tates Ped |  |  |  |  |
| Ths. cer say |  |  |  |  |
| 16s. rex tear |  |  |  |  |
| Protois Bupdene |  |  |  |  |
| find |  |  |  |  |
| Yose yer Year |  |  |  |  |
| Ginerels: |  |  |  |  |
| Kind |  |  |  |  |
| Hes per Year |  |  |  |  |
|  |  |  |  |  |

Inventory of Peed Storage and reed-lot incilities:
Fay storage tamacity $\qquad$
Gain storage caproity $\qquad$
Fan Carn storage tapselty $\qquad$
Sinas Storasa Capmeity $\qquad$
Feck-Lot Pacilitias - Tyte ans Capaty $\qquad$

Estimated Average Muber of 10-llour Days of Labor Becuired For Present Fractices and Present Size of Operationa

| Month | Feeding $\mathrm{b} /$ | Tama gement of Cattle e/ |  <br> liaint. of Fences, Eldgs, fitc. $\qquad$ | Total | Percent Hired |
| :---: | :---: | :---: | :---: | :---: | :---: |
| January |  |  |  |  |  |
| February |  |  |  |  |  |
| March |  |  |  |  |  |
| April |  |  |  |  |  |
| May |  |  |  |  |  |
| June |  |  |  |  |  |
| duly |  |  |  |  |  |
| Augnet |  |  |  |  |  |
| Septernber |  |  |  |  |  |
| October |  |  |  |  |  |
| àovember |  |  |  |  |  |
| Deceraber |  |  |  |  |  |
| Tate |  |  |  |  |  |

If Lane estinates apply to size of herd and practices as reported in carlier tables of guestionnaire.
b/ Noludes winter feeding, creep feeding of calves, and any rattening operations reported earlier as "usual" oparations.
c/ Includes movenent of cattle about farm, buying and selling, administering medicines, etc.
a/ Include only expected annual labor applied to repair and/or maintain livestock facilities. Exclucie any constructing of new facilities.

## Marketing:

(1) Greed
(2) Usual Calving Dates
(3) Age Calves Sold $\qquad$ (4) Wioight Calves Sold:

Steers $\qquad$ Keifers $\qquad$ (5) Age Cows Sold $\qquad$
(6) Weight Cows Sold
(7) Age Sulis Sold $\qquad$
(8) Tumber Catile Nettened $\qquad$ (9) Age Fat Csttle her -
keted $\qquad$ (10) Weight Fat Cattle Sold: Steers $\qquad$
Feifers $\qquad$ (11) When are Fet Cattle Marketed?

Calves
$\qquad$ Fed Cattle $\qquad$

$\qquad$ Fed Cattle

## Other Information:

2. Do you creep feed you calves?
3. If you are not now fattening any of your calves, have you ever?
$\qquad$
4. If you are not fattening any of your calves, why? $\qquad$
$\qquad$
$\qquad$
5. Do you raise enough grain to fatten your calves? $\qquad$
6. If you do not raise enough grain to feed four calves, could you: $\qquad$
7. Do you ratce sufficient roughage to aid in fattening your calves?
8. Could you provide pasture between weaning and starting in feed lot? $\qquad$ Do you think it would be advisable? $\qquad$
9. Do you feel you covid fatten your caives on pasture with grain self fed? $\qquad$

## Dther Information (Continued):

9. Do you feel you could buy the feed to faiten your calves and make a profit? If yes, whet prices could you nomelly afford to pay for the various feeds? $\qquad$
$\qquad$
10. In a comercial fieed lot was available locally, would you be interested in using it? $\qquad$
11. Are you now Pattening any of your calves? ._It so, are
 so, are they fall celved or spring calved___ In your opinion are spring_or_ or fall_____ calves best suited for a fattening program? Why? $\qquad$
$\qquad$
$\qquad$
12. Would you give me your personal opinion on fattening your calves vs. selling as feeder calves? $\qquad$ $\xrightarrow{\square}$ -
$\qquad$
$\qquad$
$\qquad$
13. Do you think any changes should be nade in your present livestock program? If yes, what changes? $\qquad$
$\qquad$
$\qquad$ -a Why? $\qquad$


| Year | Grade \& Dates |  | Length Feeding Period | Weight |  | Quantities By Kinds of Feed Fed | Describe Feed Lot Facilities | $\begin{gathered} \text { Investment } \\ \text { of } \\ \text { Feed Lot } \\ \text { Facilitities } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Begin | End |  | Begin | End |  |  |  |
| 19 |  |  |  |  |  |  |  |  |
| 19 |  |  |  |  |  |  |  |  |
| 19 |  |  |  |  |  |  |  |  |
| 19 |  |  |  |  |  |  |  |  |
| 19 |  |  |  |  |  |  |  |  |

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[^0]:    ${ }^{1}$ W. B. Back and Verner B. Hurt, Potential for Agricultural Adjustment and Development in the Ouachita Highlands of Oklahoma, Oklahoma Agerieultural Experiment Station Bulletin B-582 (in process of publication, 1961).
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