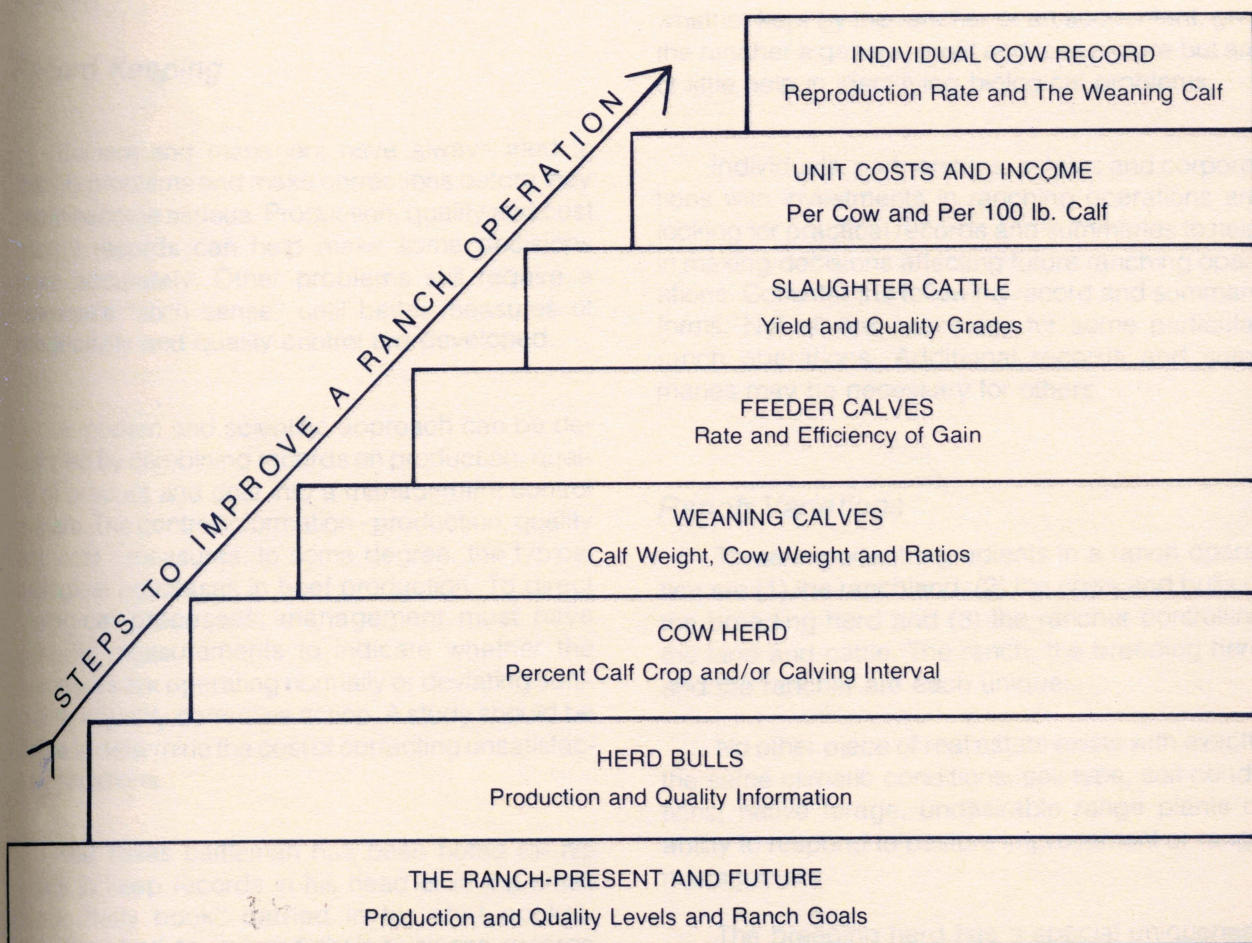


# MANAGEMENT CONTROLS FOR LARGE RANCHES

L. A. MADDOX, JR.



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# MANAGEMENT CONTROLS FOR LARGE RANCHES

L. A. MADDOX, JR.\*

As ranches get larger, some owners hire professional managers; other owner-managers try to make their investments and management ability more productive. With management changes, new record systems for large ranches must be developed.

## *Record Keeping*

Owners and managers have always tried to identify problems and make corrections before they could become serious. Production, quality and cost control records can help make some decisions more accurately. Other problems still require a cowman's "sixth sense" until better measures of productivity and quality control are developed.

A modern and scientific approach can be developed by combining records on production, quality of product and cost into a management control system. The control information - production, quality and cost - measures, to some degree, the typical biological processes in beef production. To direct biological processes, management must have periodic measurements to indicate whether the processes are operating normally or deviating sufficiently to justify corrective action. A study should be made to determine the cost of correcting unsatisfactory situations.

The Texas cattleman has been noted for his ability to keep records in his head or in the small black "tally book" carried in his shirt pocket. Ranchers had to improve their business records

when government began requiring proof of income and expenses to establish proper tax contribution. As these laws became more complex, it became necessary for ranchers to determine annual income, deductible expenses, capital gain, depreciable items and depreciation rate. These records, whether kept by the rancher or an accountant, give the rancher a general profit and loss picture but are of little help in identifying biological problems.

Individuals, partnerships, estates and corporations with investments in ranching operations are looking for practical records and summaries to help in making decisions affecting future ranching operations. Consider the following record and summary forms. Not all are necessary for some particular ranch operations. Additional records and summaries may be necessary for others.

## *Ranch Variations*

Three important ingredients in a ranch operation are (1) the ranchland, (2) the cows and bulls of the breeding herd and (3) the rancher controlling the land and cattle. The ranch, the breeding herd and the rancher are each unique.

No other piece of real estate exists with exactly the same climatic conditions, soil type, soil conditions, native forage, undesirable range plants or ability to respond to pasture improvement or range management.

The breeding herd has a special uniqueness because of the characteristics of the original cow herd, how and why cattle were culled, the method of selecting replacement heifers and the kind of herd bulls the rancher has used.

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The rancher's uniqueness exists because no one else has exactly the same education and experiences to use in making decisions. Each rancher has different goals for himself and his family and reacts differently to the value of range and pasture improvement, reasons for selections of breeds or crosses of cattle to stock the ranch, amount of money to be invested in replacing bulls and methods of marketing cattle produced on the ranch.

## ***The Ranch-Present and Future***

When starting a continuing record of production and quality characteristics, document the present production and quality levels and set long term goals. Form D-915a, ***Production and Quality Levels and Ranch Goals***, furnishes an easy way to record production characteristics, including numbers of (and percentages when applicable) cows bred, calves born, calves weaned, acceptable calves weaned, average weaning weight and average cow weight. To determine the quality level of young cattle produced on the ranch, record such traits as age and weight in the feedlot and the weight, quality and yield grades of the finished cattle.

Goals should reflect necessary changes in production and quality to establish the most profitable ranch operation within each rancher's personal preferences.

A completed Form D-915a, ***Production and Quality Levels and Ranch Goals***, gives an accurate record of the year's activity. Desirable changes in production or quality characteristics should reflect improvement in management. Stable production levels in problem areas may indicate need for management changes. The number and percentage of breeding animals replaced indicate the possibility of genetic changes causing adjustments in production and/or quality.

Genetic change is slow on most large ranches. This is particularly true when the only addition of new genetic material is replacement of about 20 percent of the breeding bulls. When new bulls introduced at this rate are the same breed, same breeding and same type, one can scarcely identify any real change from these records in less than 5 years.

## ***Herd Bulls***

The idea of improving productivity and quality within a cow herd by introducing superior genetic material through the sire is sound. In one year the bull contributes half of the genetic material of the calves being produced. The problem to the cattleman has been, "What is a good bull and how can one be recognized?" Research on procedures to measure production and quality characteristics started at Miles City, Montana in 1936. The first real attempt to develop testing procedures for use on a national basis resulted in the formation of the Performance Registry International in 1955. Refinement of testing procedures and record programs developed by breed associations makes it possible to buy bulls with performance and/or production information. This helps a cattleman to reliably predict a bull's breeding value on many production and quality characteristics.

Information on young bulls, outlined in Form D-914b, ***Production and Quality Information***, provides for an average 205-day weaning weight and an average weaning weight ratio of all bulls purchased within a given year. A registered breeder with a reasonable production testing program would also be able to furnish yearling weights and ratios if young bulls are purchased at 12 or more months of age. A few progressive registered breeders can furnish feedlot and carcass data on half sibs (calves sired by the same bull). Performance information on individual bulls, plus feedlot and carcass data on half brothers, would be helpful. A 205-day weaning weight and a yearling weight should be considered minimum essential information. Bulls may be purchased at a younger age when 205-day weights and ratios plus feedlot and carcass information on half brothers are available. This would reduce the extra cost of feeding the young bull and the possibility of damage to breeding ability because of overfeeding.

## ***Cow Herd***

A cow that fails to calve every year is unprofitable. A heavy calf does not compensate for 18- to 24-month calving intervals. The most important record for the cow and calf man is the reproductive performance of the breeding herd.

Average percent calf crop should be calculated each year and should be based on the number of cows exposed to bulls, divided into the number of calves born. Percent calf crop calculated in this manner provides information that relates directly to reproduction but leaves out calf losses, a problem requiring different actions for solution.

Average percent calf crops for long calving periods may be misleading. Cows can, for a period of time, calve every 13 or 14 months and still fit within a 7- or 8-month calving period, causing the average percent calf crop to appear acceptable. With the use of information suggested on the Form D-915c, *Percent Calf Crop and/or Calving Interval*, calving intervals can be determined. If a large number of cows exceed an average of 12 months, some corrective action should be taken in management or breeding to give the best chance possible of one calf each 12 months.

Individual cow records are necessary to establish average calving intervals. Records on the number of calves born each month during the calving season could be used to estimate the average calving interval. Data from these records could help determine problems related to animal health, reproduction, nutrition and/or management.

### Weaning Calves

Calf and cow weights can indicate many things related to production efficiency. These weights can be recorded on an annual basis on Form D-915d, *Calf Weight, Cow Weight and Ratios*. These are group weights taken at the time calves are weaned. If calves are weaned and sold at one time, calf weights are available. The weight of the cows culled annually from the breeding herd or of a random sample of cows will have meaning as annual weight records. The trend of calf weight and cow weight over a period of years will reflect changes in nutrition level and possibly genetic change. These two weights can be expressed as a weight ratio using weaning weight as a percentage of mature cow's weight. Both calf and cow weights become the basis for many comparisons in subsequent records that help answer questions about overall efficiency and profitability of the ranch operation.

Correction factors for both calf and cow weights should be used if the groups are divided so that weights at different ages are available.

Table 1. Correction for calf weights, lbs.

	British and Small Dairy Breeds	Other Breeds
2 year-old dams	+ 15%	+ 8%
3 year-old dams	+ 10%	+ 5%

Table 2. Correction for dam weights, lbs.

2 year-old dams + 20%	4 year-old dams + 10%
3 year-old dams + 15%	5 year-old dame + 5%

### Feeder Calves

\* A record program for a cow and calf operation should record the kind of product being marketed. This can be measured by feedlot performance and carcass characteristics after the feeding period. Ranchers' goals, as they relate to a product's quality, vary considerably. In ranching operations, production efficiency while producing the calf should be the primary consideration. What the feeder and packer want should be secondary. There is often more concern with what the feeder and packer want than with making the cow and calf industry profitable.

Using Form D-915e, *Rate and Efficiency Of Gain*, rate of gain is plotted because it relates to the time cattle must be in the feedlot and the cost of gain. Most commercial feedlots feeding cattle in one pen are able to furnish this information. Rate of gain and feed required per 100 pounds gain should be a better figure than cost of gain on long term records because of changing feed prices.

This information is not hard to obtain on large ranches since weaning calves are sold in large groups to one buyer, and many groups retain their identity through the feedlot. Some large ranchers maintain ownership of their cattle through a commercial feedlot.

Rate and efficiency of gain can be measured every 3 or 4 years on most large ranches where breeding programs require at least this much time to change one-third of the genetic makeup on the breeding herd. Large ranches may wish to use a random sample of the steer calves instead of the entire calf crop.

## *Slaughter Cattle*

Even though cattle are efficient at weaning time and grow efficiently through the feedlot, carcass characteristics have an important effect on total income and profit. To add this last dimension to ranch beef production, Form D-915f, *Yield and Quality Grades* was developed. Two measuring devices, yield grades and quality grades, are used to indicate the product's quality. Grading carcasses on yield and quality can be done by USDA graders. Their record will serve as documentary evidence of these data. If the cattle are sold to a small packing plant, it may be necessary for you or the feeder to make arrangements to have a government grader available at slaughter time.

Ranchers may wish to take advantage of the Beef Carcass Data Service. This service is a joint USDA-beef cattle industry cooperative effort to help cattle producers and feeders obtain carcass data on cattle they produce. A special tag placed in the ear of calves will be removed and attached to the carcass. The USDA meat grader assigned to that plant will grade the carcass. For additional information, contact Extension Meats Specialist, Texas Agricultural Extension Service, College Station, Texas.

A large percentage of the steer cattle fed in the Texas Panhandle are expected to produce cattle with yield grades between one and two in the low-choice grade. Many cattle fed in other parts of the state are expected to have the same yield grade in average or high good-quality grades. Individual goals may be for a market with different carcass characteristics. The overall ranching operation in your locality may or may not require cattle capable of grading choice when slaughtered.

Product quality can be measured on a reasonable sample of feeder calves rather than on the entire calf crop. Unless there are radical changes in a breeding program, annual product quality measurements are not necessary.

## *Unit Cost and Income*

To be useful for making ranch management decisions, records must be more detailed than total ranch costs and total ranch income. Costs and income per cow, along with costs and selling price per 100 pounds of calf weaned, give the rancher an opportunity for a closer study of total ranch operation. When studying production efficiency of present breeding herd, income from culled cows and bulls may be ruled out since their relationship is indirect. Some ranchers who have cost per cow information make errors in decisions when comparing the cost of the cow to the selling price of the calf. This relationship would be accurate only if one had a 100 percent calf crop.

The section on Form D-915g, *Cost and Income-Per Cow and Per 100 Pound Calf*, that deals with cost and income per cow shows two meaningful figures that can be compared to indicate production efficiency.

The section on cost and selling price per 100 pounds of weaned calf can be used to make direct comparisons between cost of production and selling price per 100 pounds of weaned calf. Differences in these figures probably provide the best measure of overall efficiency, other than percent return to total capital investment.

If production cost per 100-pound weaned calf is disappointing when compared to the selling price of the same 100-pound weaned calf, a study should be made of breeding, pasture, marketing, animal health and supplemental feeding programs. This could indicate the need for changes to increase profitability.

## *Individual Cow Records*

Most large ranchers immediately lose interest when individual cow records are mentioned. Detailed records, important and useful for registered breeders, often are too expensive for large commercial ranches. It is possible however, for large ranchers to keep useful records without excessive labor.

Individual cow records on large ranches require number identification of each cow in the breeding herd. This number can be a fire brand, an ear tag, neck chain or neck band.

Individual cow records for large ranches do not require each calf to be identified with its mother. A record showing the identification number of each cow that did not calve and of each cow that produced a "reject" calf is necessary to establish useful individual cow records. Cows with unsatisfactory production records should be 30 percent or less of the total herd. Cows that calve regularly and produce acceptable calves would be considered normal, and records would be so marked.

Palpation to determine pregnancy will furnish additional information about the biological behavior of your cow herd. If percent calf crop is low as indicated by the number of cows palpated open, begin corrective action and start making plans for cows that will not calve.

With a lifetime record on a beef cow, recorded on Form D-915h, *Individual Cow Record*, it is convenient to identify the cow's age, the number of times calved and kind of calf produced. If it is possible to palpate the cow, you can have a record of non-pregnant cows before the calves are weaned.

Each line on Form D-915h should identify one calf crop year. This can be identified best by the year calves are weaned. If cows are palpated, identify the month and record as pregnant or open. If a

cow's number is not on the list of dry cows at the end of the calving season, the record should show that she has calved.

Identification of dams that have produced "reject" calves can be done by selecting these unacceptable (weight and/or conformation) calves at or near weaning time. Turn all cows and "acceptable" calves out in the pasture leaving the "reject" calves in the pen. Record the identification numbers of the cows that are still around the pens 12 to 18 hours later.

Records showing that a cow failed to calve or raised a reject calf will give some indication of her lack of (1) genetic ability for reproduction, (2) proper nutrition for rebreeding, (3) genetic ability for acceptable conformation, (4) genetic ability for milk production, (5) proper nutrition for milk production and/or (6) freedom from diseases or parasites. When average production levels are good, dry cows and dams of reject calves should be considered culls and sold for slaughter.

A comment made in the "remark" column may be useful later in evaluating a cow's record. Unusual circumstances affecting production of individual cows usually are not remembered accurately and should be recorded as soon as possible.

If keeping written records of individual identification and breeding performance seems impossible, similar results can be obtained by another method. A cow identified as a dry cow or a producer of "reject" calves can be permanently marked by a special ear mark, tipping a horn or a fire brand. For example, a cow that fails to conceive might have her left horn tipped, her left ear cropped or a zero branded on the left jaw. Cows that produce reject calves could have the right horn tipped, the right ear cropped or R branded on the left jaw. Systems similar to this, used in many countries, allow a rancher to have useful information on a cow's production characteristics available on sight.

*Data and remarks shown on each sample form are only examples and are not intended to relate to each other.*

THE RANCH-PRESENT AND FUTURE  
Production and Quality Levels and Ranch Goals

Form D-915a

Date January 1, 1974

Present Production

Goals for 1979

PRODUCTION

Cows bred

Number                      Percentage  
400                                      \_\_\_\_\_

Number                      Percentage  
500                                      \_\_\_\_\_

Calves born

320                                      80

470                                      95

Calves weaned

300                                      75

465                                      93

Acceptable calves weaned

240                                      80

442                                      95

Average weaning weights

400                                      \_\_\_\_\_

500                                      \_\_\_\_\_

Average cow weights

1,000                                      \_\_\_\_\_

1,000                                      \_\_\_\_\_

QUALITY

Age into feedlot

14 mo.

12 mo.

Weight into feedlot

700 lb.

700 lb.

Length of feeding period

150 days

150 days

Rate of gain in feedlot

2.7 lb.

3.2 lb.

Weight of finished cattle

1,105 lb.

1,180 lb.

Quality grade of finished cattle

70%

90%

Yield grade of finished cattle

3

1-2



Year	<u>70</u>	<u>71</u>	<u>72</u>	<u>73</u>	Remarks
Number of bulls purchased	<u>4</u>	<u>4</u>	<u>4</u>	<u>8</u>	<i>Feb. 1970 - Purchased yearling bulls from K. C. Ranch. Weaning weight only info. available.</i>
Percent of total bulls used	<u>20</u>	<u>20</u>	<u>20</u>	<u>40</u>	
Individual Information					
205 day wt., lb.	<u>515</u>	<u>500</u>	<u>525</u>	<u>500</u>	<i>Feb. 1971 - Purchased yearling bulls from Blank Gain Test - good quality. Raised by 4 different breeders.</i>
205 day wt., ratio	<u>109</u>	<u>104</u>	<u>108</u>	<u>108</u>	
140 day gain test, lb.		<u>3.47</u>	<u>3.16</u>		<i>Feb. 1972 - Purchased yearling bulls from B. C. Ranch, all half brothers with complete records including steer half brothers in a feedlot and slaughter.</i>
140 day gain test, ratio		<u>108</u>	<u>106</u>		
Yearling weight, lb			<u>999</u>		<i>Oct. 1972 - Like bull from B. C. Ranch. Purebred 8 calves from same sire.</i>
Yearling weight, ratio			<u>107</u>		
Steer half sibs — Production & Product					
No. of half sibs			<u>40</u>	<u>40</u>	
Day on feed			<u>150</u>	<u>150</u>	
Feedlot gain, lb./day			<u>3.1</u>	<u>3.1</u>	
Feed per lb. of gain			<u>7.8</u>	<u>7.8</u>	
Quality grade			<u>80% C</u>	<u>80% C</u>	
Yield grade			<u>2-3</u>	<u>2-3</u>	

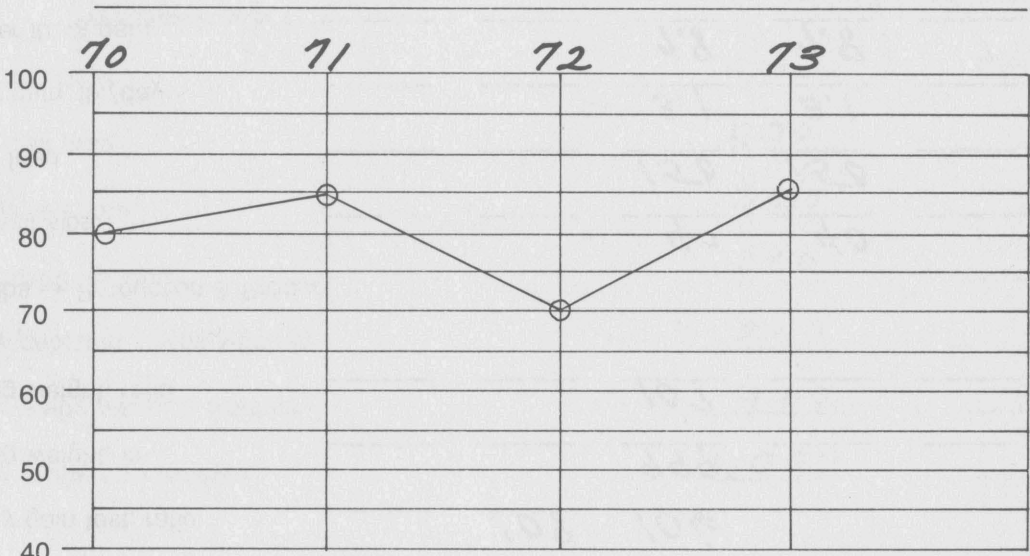
COW HERD

Percent Calf Crop and/or Calving Interval

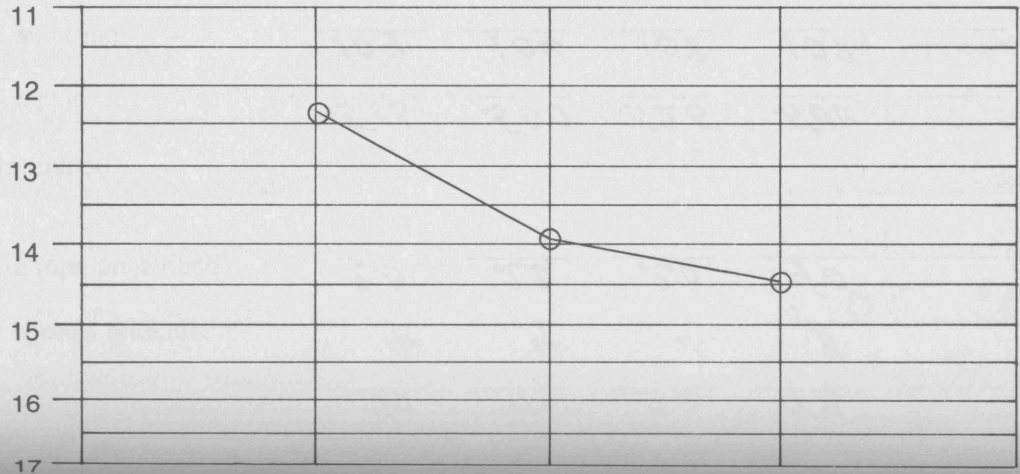
Year

Remarks

Average percent calf crop



Average calving interval, months



Oct. 1970 - No records other than no. of calves weaned.

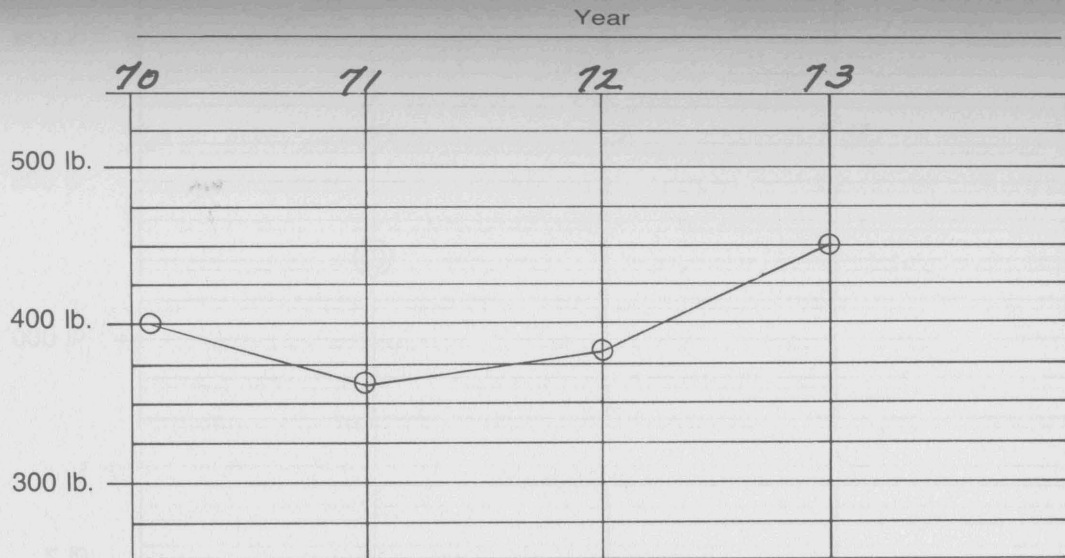
Oct. 1971 - Weaned over 84% calf crop. Bull still working. Had vet palpate cow herd and found only 50% pregnant. Vet diagnosed Vibriosis and treated breeding herd. Seven bulls sold.

Oct. 1972 - Weaned a 65% calf crop with about 15% of calves less than 3 mo. of age.

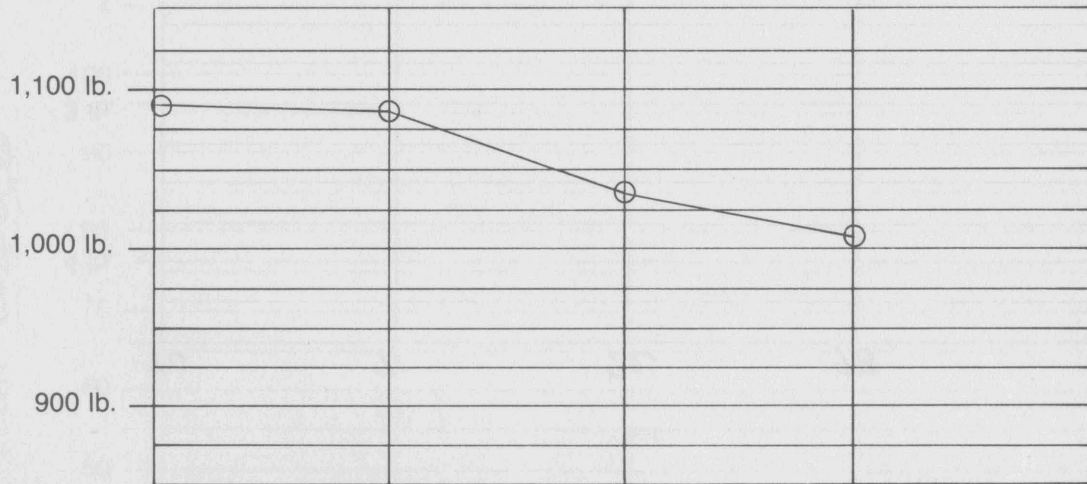
Oct. 1973 - Weaned 85% calf crop but still had long calving interval because of cows that missed in 1972.

WEANING CALVES  
Calf Weight, Cow Weight and Ratios

Weaning weights



Cow weights



Ratios 37      33      36      45

(Calf weight as a percentage of cow weight)

Remarks

Nov. 1970 - Excellent grass year - cows fat - calves weaning wt. average.

Nov. 1971 - Good grass year except dry during early fall which made light calves.

Nov. 1972 - Dry fall continued into hard winter and cows lost excessive weight. First experiment with crossbreeding by using BCD bull on entire cow herd.

Nov. 1973 - Crossbreeding seems to raise calf weight but cow weight was down.

FEEDER CALVES  
Rate and Efficiency of Gain

		Year			
		70	71	72	73
Rate of Gain	4 lb.				
	3 lb.				
	2 lb.		⊙		
Feed Req./100 lb. Gain	1,000 lb.				
	800 lb.		⊙		
	600 lb.				

Remarks

*Nov. 1972 - The 200 steers produced in 1971 were grazed on wheat pastures the winter of 71-72, placed in feedlot April 15 and fed 154 days. Feeding conditions were good but gains and feed conversion below average. Decided to try crossbreeding. Will feed and slaughter the steer cattle of the 1974 calf crop.*

SLAUGHTER CATTLE  
Yield and Quality Grades

Yield Grade

Quality Grade

Year

Remarks

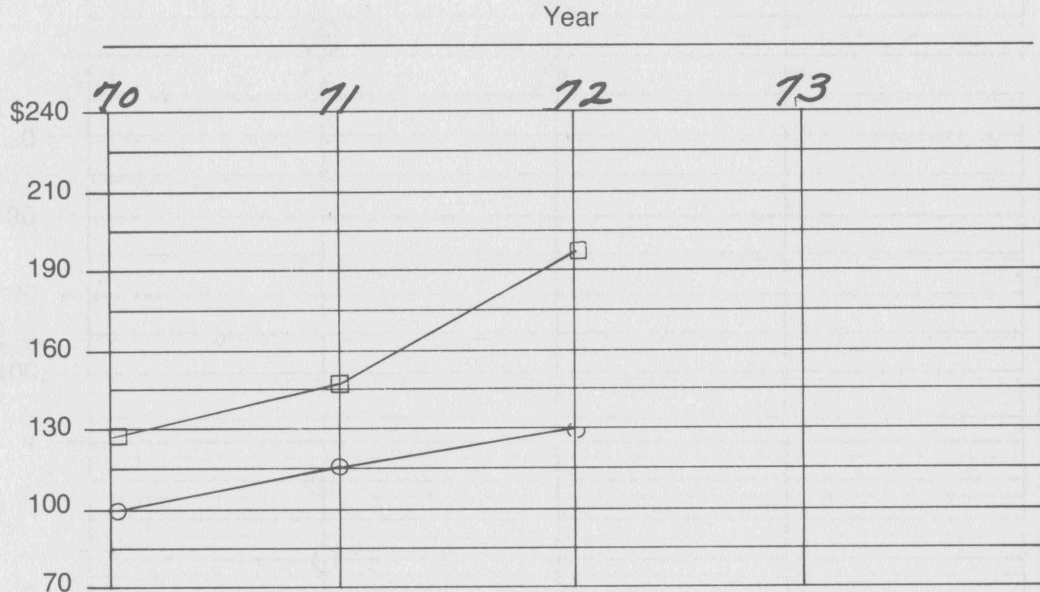
	70	71	72	73
1				
2				
3		⊕		
4				
100				
90				
80				
70				
60		⊕		
50				
40				

Percent Choice

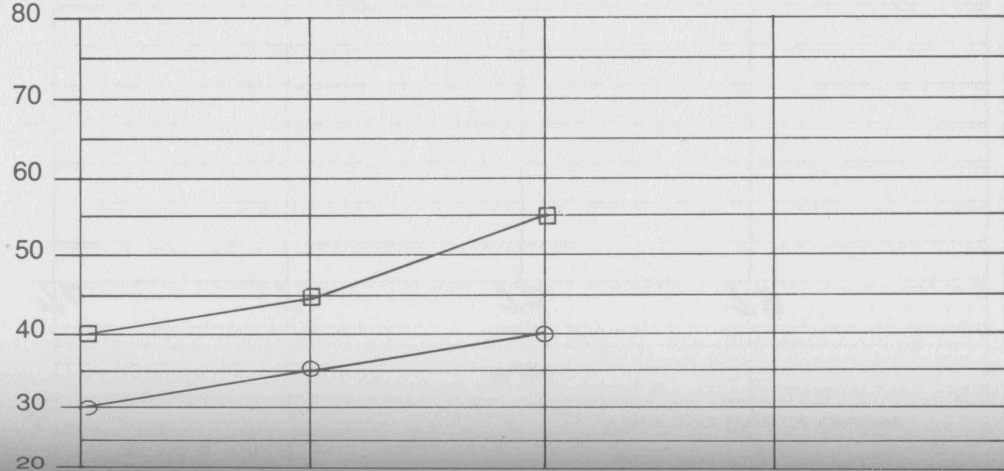
Nov. 1972 - Fed 200 steers produced in 1971. Placed in feedlot April 15, 1972. Fed for 154 days and slaughtered at M+L Packing Co. Result - disappointment. Decided to try crossbreeding. Will feed and slaughter 1974 steer calves.

UNIT COSTS AND INCOME  
Per Cow and Per 100 lb. Calf

Cost and Income Per Cow



Cost and Selling Price/100 lb. Calf Weaned



Remarks

Jan. 1971- The past year was about average with profit per cwt of \$9.40 and \$30.00 per cow.

Jan. 1972- Calf weight and selling prices went up but so did expenses because of feed costs for spring drouth. Profit/cwt \$8.20 and per cow \$27.00.

Jan. 1973- Everything's up but selling prices exceeded costs. Profit per cwt. \$25.30 and per cow \$54.00.

SLAUGHTER CATTLE  
Yield and Quality Grades

Year

Remarks

Yield Grade

Quality Grade

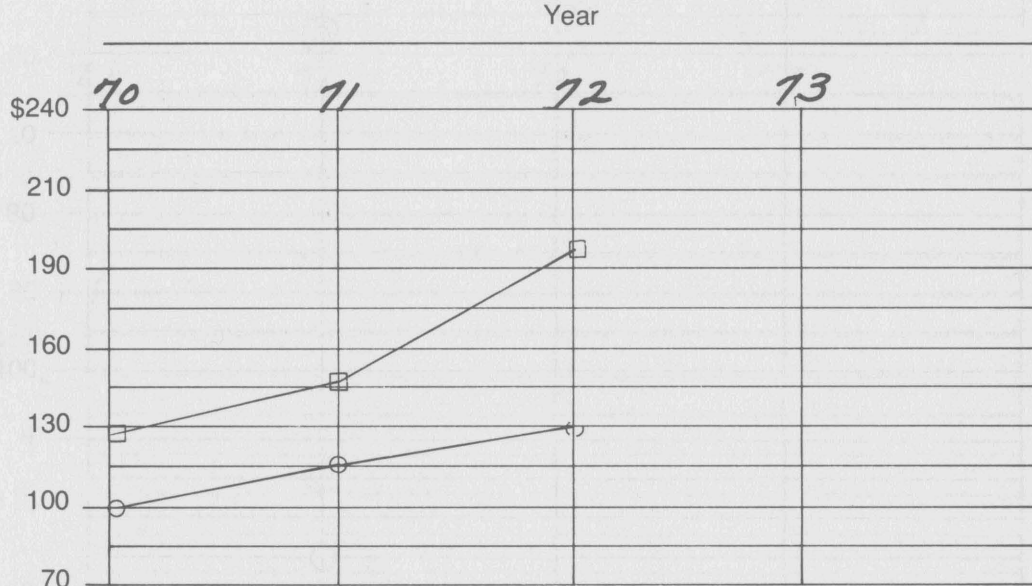
Percent Choice

	70	71	72	73
1				
2				
3		⊕		
4				
100				
90				
80				
70				
60		⊙		
50				
40				

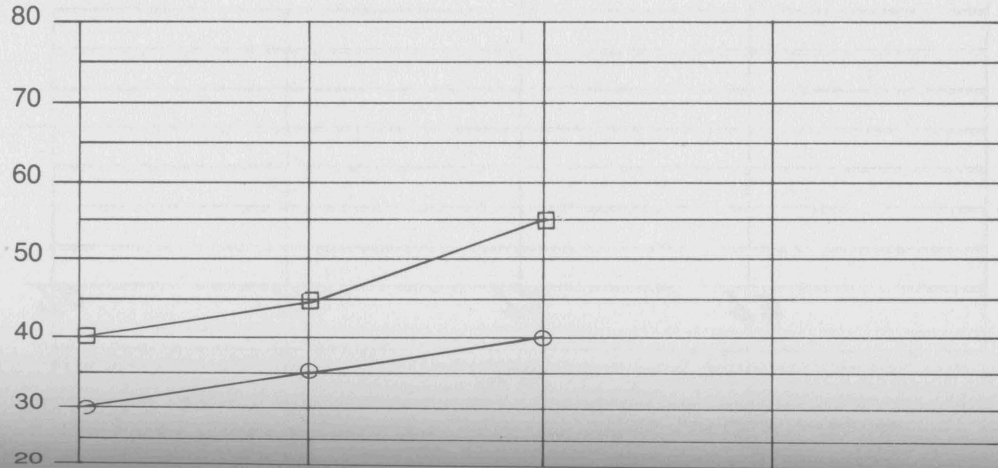
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UNIT COSTS AND INCOME  
Per Cow and Per 100 lb. Calf

Cost and Income Per Cow



Cost and Selling Price/100 lb.  
Calf Weaned



Remarks

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