SYSTEMS OF BEEF CATTLE PRODUCTION IN EASTERN KANSAS 1954-57

by

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B. S., Kansas State College
of Agriculture and Applied Science, 1957

A THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Economics and Sociology

KANSAS STATE COLLEGE
OF AGRICULTURE AND APPLIED SCIENCE

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INTRODUCTION

Climatic conditions, soil and topography are mainly responsible for the various systems of beef cattle production in Kansas. Cattle production varies from northeast Kansas, where feed crops enable production of many different cattle systems, to southwest Kansas, where many cowherds and lighter weight cattle are grazed on the short grass ranges in the West. Between these two areas is the Flint Hills or long grass summer grazing area where considerable cattle are shipped in each year for summer grazing.

Beef cattle contribute a large part to the total Kansas farm income. For years 1949 - 1954, 55 percent of the Kansas cash farm income came from the sale of livestock and livestock products. Of this, cattle and calves made up 34 percent, hogs 7 percent and dairy products 7 percent (Table 1). With an increase in acreage of feed crops and land being seeded to grass due to acreage allotments and soil conservation practices, livestock production may become even more important.

Table 1. Percentage distribution of cash farm income from marketings and government payments for Kansas, 1949-54.

Item	1949	1950	1951	1952	1953	1954	1949-54 Avg.
Total crops	45.5	44.3	36.0	46.4	47.0	47.3	44.5
Cattle & calves	32.4	33.9	39.1	33.9	30.5	32.3	33.7
Hogs	6.6	6.5	8.5	6.4	6.1	6.1	6.7
Sheep & lambs	1.5	2.6	2.1	1.2	0.9	1.4	1.6
Wool	.0	.1	.2	.6	.2	.1	.1
Dairy products	6.3	6.1	6.5	6.2	7.1	6.8	6.5
Chickens & eggs	6.5	5.1	6.3	4.4	6.4	4.5	5.5
Other livestock & livestock products	0.6	0.5	0.6	0.5	0.6	0.6	0.6
Gov. payments	0.6	0.9	0.7	1.0	0.6	0.9	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Farm Income Situation, U.S. Department of Agriculture, A.M.S., 1949-55.

Problems and Objectives

During the past few years, farm problems have increased due to the drought and the price-cost squeeze. As a result, more interest has been shown in careful and detailed farm planning. Farm budgets and standards are intsgral parts of farm planning. The standards are crop yields, production and feed requirements for livestock, labor and capital requirements for crops and livestock as well as other input and output data for agricultural production.

For a long time the Agricultural Extension Service and other groups promoting technical agriculture have known that their recommendations of improvement practices are not followed on all farms where they are applicable.[1] At the present time, there is very little information available on the actual practices followed by farmers.

Rapid changes in farm practices require the need for a continuous source of up-to-date information pertaining to livestock and crop production. Advancements in agricultural technology make standards which were used 15 to 20 years ago absolete. In other instances, new practices are being adopted about which very little or no information is known.

The objectives of the study were:

(a) To obtain information on the various methods of cattle production.

(b) To acquire "standards" on physical input and output data of

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1 James H. Copp, "Personal and Social Factors Associated with the Adoption of Recommended Farm Practices Among Cattlemen," Agricultural Experiment Station Technical Bulletin 83, Kansas State College, Manhattan, Kansas, p. 3.

feed and production for the various methods of cattle production.

Previous Work

Even though beef cattle production is very important there has not been much work done on the methods and practicee of beef cattle production or the development of standards from actual farm practices. However, in 1926 Bulletin No. 1454 by the United States Department of Agriculture entitled, "Factors in the Cost of Producing Beef in the Flint Hills Section of Kansas", was published; in 1941, the Kansas Agricultural Experiment Station published Agricultural Economics Report No. 10 entitled, "Methods and Practicee used in Producing Beef Cattle in Chase and Lyon Counties." These two publicatione were concerned with making information available to aid farmers in planning quantitiee of feed, carrying capacities of pastures, and other pertinent information pertaining to beef production. The U. S. D. A. bulletin also attempted to aid the cattlemen in deciding which methods are best suited to their conditions.

Sample Farms

In the summer of 1956, 254 farmers were interviewed for thie study in Chase, Lyon, Brown and Doniphan counties, Kanese. There were not enough large cattle herds in the above four counties; therefore, additional schedulee were taken in the summer of 1957 in the surrounding area consisting of Jackson, Nemaha, Morrie, Atchison, Douglas, and Marshall counties,

Kansas. Thus a total of 275 farmers were interviewed; 92 were in Brown[1], 57 in Doniphan, 56 in Lyon, 51 in Chase, 5 each in Morris and Nemaha, 3 each in Jackson and Atchison, and 2 each in Douglas and Marshall counties.

In order to select the sample of farmers to be interviewed, it was first necessary to get a list of all the beef producers in the study area. This list was prepared by the county agents according to the methods of handling beef cattle. A table of random numbers was used to select from this list the farmers who were to be interviewed. If the farmer selected could not be contacted upon the first visit, the interviewer made two re-calls, or a total of three visits, if necessary, for an interview. If the farmer still had not been interviewed, or if he had less than ten head of beef cattle, an alternate name was selected. The first alternate was the farmer whose name preceeded the original name chosen on the list. If, after two calls, the enumerator was also unsuccessful in obtaining an interview from the first alternate, the farmer whose name appeared following the original name was chosen as the selected second alternate to be interviewed. If no schedule was obtained by two visits from the second alternate, the enumerator continued on to the next random selected farmer. This procedure was used throughout the survey.

Description of the Area

The study area was confined to selected counties in type of farming

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[1] One schedule, which was taken in Nebraska about three miles from the Brown county line, Kansas, was included in the Brown county tabulation.

areas 3, 4, 5, and 8[1]. Cattle are of major importance in livestock production in these counties (Table 2). Also the cattle production in these counties was representative of the various methods of beef cattle production for all counties in eastern Kansas.

Table 2. Number of livestock on farms, January 1, 1956, by counties Atchison, Brown, Doniphan, Jackson, Nemaha, Marshall, Chase, Lyon, and Morris, Kansas.

County	Area	Kind of Livestock				
		Milk cows	Other cattle	Hogs	Sheep & lambs	Chickens
Douglas	3	10,500	27,600	13,400	5,660	106,000
Atchison	4	7,250	31,150	23,500	2,750	126,000
Brown	4	9,900	46,400	37,700	7,090	151,300
Doniphan	4	4,950	26,250	39,600	3,750	105,900
Jackson	4	9,400	42,400	18,400	3,960	176,000
Nemaha	4	11,800	50,300	49,800	4,400	238,600
Marshall	8	11,400	46,200	26,100	2,860	286,200
Chase	5	1,800	43,400	3,700	1,480	45,600
Lyon	5	7,800	66,500	16,000	3,300	206,800
Morris	5	5,700	56,800	11,800	2,420	109,000

Source: Farm Facts 1955-1956.

Area 3. Douglas county, which is in Area 3, is in eastern Kansas (Fig. 1). This area is in the general farming region of eastern Kansas. Corn is the predominant grain crop and is followed in importance by wheat and oats. Alfalfa is the major hay crop. Beef production, dairying and truck farming are common in this area.

1 J. A. Hodges, F. F. Elliott and W. E. Grimes, "Type of Farming in Kansas", Agricultural Experiment Station Bulletin 251, Kansas State Agricultural College, Manhattan, Kansas, pp. 54-79. The areas were slightly revised by J. A. Hodges in the Principle of Comparative Advantage applied to Farm Organization as found in Type-of-Farming Areas in Kansas. Ph.D. Thesis, Harvard, 1938.

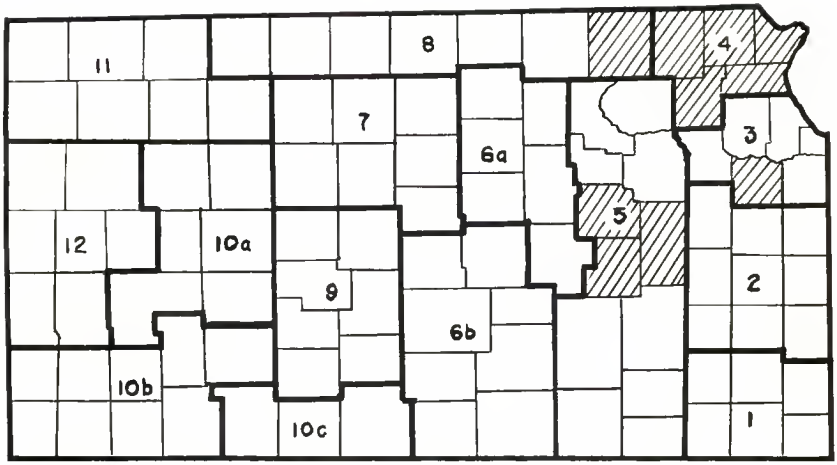

Fig. 1. Kansas type-of-farming areas.

Key for type-of-farming areas ▨ Counties reporting in the survey

Area 1----General, livestock, cash grain, self-sufficing, poultry, dairy.

Area 2----General, livestock, poultry, cash grain, dairy.

Area 3----General, livestock, dairy, cash grain, poultry, self-sufficing.

Area 4----Livestock, general, cash grain.

Area 5----Range livestock, general, cash grain.

Area 6a---Cash grain, livestock, general farming.

Area 6b---Similar to 6a but more wheat, less pasture and livestock and more dairying.

Area 7----Cash grain, livestock, general farming.

Area 8----Cash grain, livestock, general farming.

Area 9----Cash grain, some general farming.

Area 10a--Cash grain, some livestock, and general farming.

Area 10b--Similar to 10a but more cash grain, less livestock and general farming.

Area 10c--Cash grain, livestock, and some general farming.

Area 11---Cash grain, livestock, general farming.

Area 12---Cash grain, range livestock, some general farming.

Area 4. Atchison, Brown, Doniphan, Jackson and Nemaha counties are in northeastern Kansas, and are in the "Corn Belt" area. Large corn production along with alfalfa and other feed crops makes this area one of intense cattle and hog production.

Area 8. Marshall county, which joins type of farming Area 4 on the west, is in type of farming Area 8. Even though the general production of Area 8 shows more production of wheat and less of cattle and hogs, the agricultural production in Marshall county is very similar to that of Nemaha county which is in type of farming Area 4[1].

Area 5. Chase, Lyon and Morris counties are in the area called the "Blue Stem" grazing area. It comprises 10 to 12 counties in the central and southern portions of eastern Kansas. Range livestock and cash grain are important in this area. Corn and sorghum are the chief feed crops grown. Large numbers of cattle are shipped in and out of this area annually during the grazing season. Small cowherds are kept and a small portion of steers are fed on grass or kept later on winter feed.

Procedure

Methods of Handling Cattle. The methods of beef production presented in this study were believed to be representative of cattle production in eastern Kansas. The various methods of handling beef cattle and the criteria used in classifying these methods of beef production as used in this study are as follows:

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1 Ibid., p. 68.

1. Cowhards were divided into two major systems, namely:
   a. Cowherd, no-creep fed calvss - For this type of cowherd tha calves are sold at weaning time or, in many cases, off grass as stockar calves in tha fall; or ths calves are ratainad on the farm for replacemsnt or handled in various othar ways.
   b. Cowherd, cresp fad calves - In this type of cowhard, tha calvss are started on concantrates as soon as they can eat grain (or at an aarly age) and continuad in this manner of feeding during the time they are nursing tha cow.
2. Deferred - All cattla purchased in the fall as calvss or yearlings which were wintared, grazed and full fad in that order.
3. Full fed - Cattls bought as medium to haavy yearlings or two year olds fed for diffarant lengths of time according to flesh cf cattle when bought and expected salling grade whan sold as fat cattla.
4. Wintered and full fed - Cattla usually bought in tha fall as yearlings, fed on a high parcentage of roughagas, put on full faed and sold as fat cattla.
5. Grazad and full fad - Cattla bought as yearlings or two year olds, grazed, put on full fead then sold as fat cattla.
6. Wintered - Calvaa bought as yearlings in the fall and fad a high percantage of winter roughages and sold in tha spring as stockers or feedars.

7. Grazed - Cattle bought in the spring and pastured until sold in the fall as grass fat or feeder cattle.
8. The other minor systems reported were grouped according to the combination of phases contained in the system.

The Size of Herd. The size of an enterprise is a factor for individual consideration. The cows were sorted into arbitrary size groups of 10-19, 20-29, 30-109 and 110 and over. The feeder cattle were sorted into size groups of 10-29, 30-49, 50-129, and 130 and over. These size groups were considered in this study as small, medium small, medium, and large, respectively.

The Breed of Cattle. The breed of a cowherd is also a factor for individual consideration. The various breeds of beef cattle in this study were Hereford, Shorthorn, Angus and mixed breeds. In instances where the "critter" was of more than one breed, it was referred to as mixed breed. Usually the breed that the beef producer likes best is the one with which he will have the greatest success. No one breed of cattle can be said to excel all others in all points of beef production.

The Sex of Cattle. Cattle were divided into five sex groups: steers, heifers, cows, bulls and mixed cattle. The term "mixed cattle" was used to indicate the sex group when steers and heifers were handled together.

The Grade of Cattle. Cattle were sorted according to grades reported by farmers. Grading is the final step in classifying any kind of livestock, and it affords a common market terminology for transactions. It indicates the relative degree of excellence of an animal or group of animals. Three

factors of primary importance in determining cattle grades are: (1) conformation, (2) finish and (3) quality.

Type of Market. Marketing involves services relating to the transfer of ownership of goods and payments between sellers and buyers.[1] The producer of livestock is confronted with the problem of determining where and how to market his animals. Usually there is a choice of outlets, and the one selected often varies with different species of livestock among sections of the country. Some of the common types of market in the study were: auction, terminal, direct and delivered. Auctions, which are also called sales barns, livestock auction agencies, community sales and community auctions, are places where livestock is sold on an auction basis to the highest bidder. Terminal public markets may be defined as trading centers where facilities are provided for receiving, caring for, and handling livestock where several selling agencies operate and where the privilege of buying and selling are available to all who wish to use them. Terminal public markets are also referred to as terminal markets, public markets, central markets, central public markets and public stock yards. Commission firms on central markets serve as the owner's agent and make the sale. In direct marketing slaughter animals are sold directly to meat packers either at the plant, at concentration yards, or to buyers in the country. This method of selling short-cuts the central markets and commission firms, and the animals are bought directly by packer representatives. With stockers, feeders, and breeding stock, direct marketing also

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1 A. A. Dowell and Knute Bjorka, Livestock Marketing, McGraw-Hill Book Company, Inc., New York and London, 1941, p. 1.

applies to transfer of ownership through sale other than at central markets.

Phases. Various systems of cattle production may have a different number of phases. Cowherds have two phases, wintering and grazing; deferred systems have three phases, wintering, grazing and dry lot; other systems may have only one phase. The wintering phase consists of feeding a low percentage of concentrates and a high percentage of roughages. The wintering phase begins in the fall and ends in the early spring when cattle are sold, turned onto pasture, or started on full feed. This phase usually averages a length of 180 days. During the grazing phase, cattle obtain most of their rations from green grass with supplements of cottonseed meal and small grains often added in the late summer. This phase usually averages a length of 140 days which ends when the cattle are sold, wintered or full fed. The dry lot phase may also be called the full feeding phase. This phase is a period when small portions or all of the feeds may be concentrates. It differs from the wintering and grazing phases in that it may come at any time of the year. This phase terminates when cattle are sold.

Feeds. Feed for cattle constitutes the greatest single cost of beef production. The feed for fattening cattle consists of a large amount of grain, with the necessary roughages such as silage or alfalfa. The amounts of feed fed to all cattle were taken in great detail by the enumerators. A large variety of feeds were reported of which some were in very small amounts. Feed equivalents of the more prominent feeds were used in making comparisons. Number two dent yellow corn was used as the standard grain

equivalent by which all of the cereal grains and molessee were measured. These greins included ground ear corn, crecked corn and molasees, barley, oats, grein sorghum, wheat, rye and molasses. All the legume hey which consisted of red clover, lespedeza and alfalfa were combined under the heading of alfelfe. All of the prairie, brome, wheat, wheat and brome, baled oats, and baled rye hay, cottonseed hulls, cob chop and straw were combined under the heading of preirie hey. All silages, fodder and sorghum butts were under the heading of silege. Most of the protein supplements fed were cottonseed meal, cottonseed cake, soybean oil meal, linseed oil meal and range pellets which were included under the heading of cotton-seed meal. All feed equivelents except the protein supplements were figured on the total digestible nutrients (TDN) basis.[1] Protein supplemente were figured on the digestible protein besis.[2] Other feeds were recorded as reported by farmere. Paeture used was reported in acree and had no reference to the length of days that cattle were on the various pastures. In some instances, the same paetures used in one phase were elso reported used in another phase. In determining feed comparisons, the totel quantities of the different feeds fed to each group were divided by the total number of head in that group whether or not each farmer used all the different kinds of feed. The feeds fed were computed separately for the deferred, wintering, grazing, and full fed feeding programs, and each of the two cowherd syetems.

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1 F. B. Morrison, Feeds and Feeding, The Morrison Publishing Company, Ithaca, New York, 1941, pp. 953-993.

2 Ibid., pp. 953-993.

CATTLE TO BE FULL FED

Deferred Cattle

Thie syetem of producing beef ie well adapted to Kansas whsre summer grazing, winter roughages and eome grain are available. Cheap gains and favorable price trende havs worked together over a period of years in making thie system of producing beef in Kaneas eucceseful. Three different phases of production involved are: (1) wintering, (2) grazing and (3) dry lot (full feeding). For thie system of beef cattle production, good to choice calves which weigh from 400 to 500 pounds, are usually purchased in the fall when ths pricss for theee calves are at a seaeonal low. Thsse cattle are sold a year later in November or December as fat cattle when the pricee for elaughter cattle ars at a eeasonal peak.

Number of Steers Purchased by Months and Size Groupe. In 73 purchaees, farmere reportsd a total of 3,808 defsrred steers purchased during varioue monthe of the year (Table 3). All eize groupe were represented, however, most of the deferred eteers were in ths 50-129 size group. Steers were obtained in November, December, October, January and Fsbruary. There were no purchasee in May, June and July.

Table 3. Number and percent of deferred steers in 73 purchases by size groups during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Groups								All groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
January	35	9	110	13	109	6	238	32	492	13
February	36	9	76	9	352	19			464	12
March			30	4					30	1
April			65	8					65	2
August			40	5			160	21	200	5
September	72	19							72	2
October	114	30	158	19	346	19			618	16
November	95	25	277	33	483	26	355	47	1210	32
December	32	8	77	9	548	30			657	17
Total	384	100	833	100	1838	100	753	100	3808	100

Number of Heifers Purchased by Months and Size Groups. In 29 purchases, farmers reported a total of 2,354 calves used in the deferred heifer program (Table 4). Most of the deferred heifers were in the 50-129 size group. Forty-nine percent of these heifers were purchased in October, 26 percent in Decsmber, 19 percent in November; smaller numbers were purchased in the other months except March, May, July and August.

Table 4. Number and percent of deferred heifers in 29 purchases by size group during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Groups								All groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
January	20	17							20	1
February					50	4			50	2
April	25	22							25	1
June			40	23					40	2
September	6	5							6	
October	25	21	107	60	717	59	310	37	1159	49
November			30	17	283	23	130	15	443	19
December	41	35			170	14	400	48	611	26
Total	117	100	177	100	1220	100	840	100	2354	100

Number of Mixed Cattle Purchased by Months and Size Groups. Only two farmers reported purchases of deferred mixed cattle. A total of 85 cattle were purchased of which 68 were in the 50-129 size group and 17 in the 10-19 size group.

Table 5. Number and percent of deferred mixed cattle in two purchases by size group during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Groups								All groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
October					68	100			68	80
November	17	100							17	20
Total	17				68				85	100

Type of Market for Cattle Purchased by Sex and Size Group. Of the 3,808 steers, 42 percent were purchased at terminal markets, 30 percent at auctions, 15 percent direct and 13 percent delivered (Table 6). Of the 2,354 heifers, 28 percent were purchased at auctions, 24 percent at terminal markets, 20 percent direct and 28 percent delivered. Only 85 mixed cattle were purchased; of these, 80 percent were purchased at auctions and 20 percent at terminal markets.

Grades of Cattle Purchased by Sex and Size Group. The number and percent of cattle by size groups for various grades is given in Table 7. Fifty-nine percent of the steers graded choice and 35 percent graded good. Forty-five percent of the heifers graded choice and 51 percent graded good.

Table 6. Type of market for deferred cattle in 104 purchases by sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Purch.	Type of Market: Auction		Terminal		Direct		Deliver		All markets	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%
Steers:											
0-29	21	203	53	121	32	20	05	40	10	384	100
30-49	23	217	26	350	42	108	13	158	10	833	100
50-129	25	556	30	902	49	284	16	96	05	1838	100
130 & over	4	170	22	238	32	160	21	185*	25	753	100
Total	73	1146	30	1611	42	572	15	479	13	3808	100
Heifers:											
0-29	6	92	79	—	—	—	—	25	21	117	100
30-49	5	106	60	40	23	—	—	31	17	177	100
50-129	15	471	39	70	06	476	39	203*	16	1220	100
130 & over	3	—	—	440	52	—	—	400	48	840	100
Total	29	669	28	550	24	476	20	659	28	2354	100
Mixed Cattle:											
0-29	1	—	—	17	100	—	—	—	—	17	100
50-129	1	68	100	—	—	—	—	—	—	68	100
Total	2	68	80	17	20	—	—	—	—	85	100

* Purchased through trader or commission man.

Average Weight of Cattle Purchased by Grade, Sex and Size Group.

The average weight for all deferred steers purchased was 618 pounds (Table 8). The average weight for the heifers was 408 pounds, which was less than that for the steers. The deferred mixed cattle were the lightest of the entire group, the average weight being 377 pounds.

Table 7. Number and percent of deferred cattle in 104 purchases by grade, sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Grade								All grades	
	Fancy		Choice		Good		Common			
	No.	%	No.	%	No.	%	No.	%	No.	%
Steers:										
0-29	24	6	151	39	187	49	22	1	384	100
30-49			658	79	175	21			833	100
50-129			868	47	810	44	160	9	1838	100
130 & over			593	79	160	21			753	100
Total	24	1	2270	59	1332	35	182	5	3808	100
Heifers:										
0-29			25	21	92	79			117	100
30-49			97	55	80	45			177	100
50-129			641	52	495	41	84	7	1220	100
130 & over			310	37	530	63			840	100
Total			1073	45	1197	51	84	4	2354	100
Mixed Cattle:										
0-29			17	100					17	100
50-129			68	100					68	100
Total			85	100					85	100

Number of Steers Sold by Sex and Size Group. A total of 4,122 steers were sold, of which 3,808 steers were purchased and 314 were raised (Table 9). Of the total number, 612 were in the 0-29 size group, 1,146 in the 30-49 size group, 1,478 in the 50-129 size group and 886 in the 130 and over group. Sales were reported for each month of the year; however, the greatest number of cattle were reported sold in January. This might be explained in part by sales of cattle being delayed until after January 1 because of income tax purposes. Other months in which there were a large number of sales were October, November and December.

Table 8. Average weight of deferred cattle in 104 purchases by grade and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Cattle	Grade				All grades
		Fancy	Choice	Good	Common	
	No.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:						
0-29	384	383	664	586	550	601
30-49	833		570	526		554
50-129	1838		628	542	447	569
130 & over	753		520	600		548
Total	3808	383	606	556	481	618
Heifers:						
0-29	117		478	414		424
30-49	177		405	433		419
50-129	1220		395	397	391	396
130 & over	840		397	388		391
Total	2354		410	407	391	408
All Mixed Cattle	85		377			377

Table 9. Number and percent of deferred steers in 100 sales by size group during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Group								All groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
January	71	12	69	6	510	35	597	67	1247	30
February	56	9	114	10	260	18			430	10
March	9	1			50	3			59	1
April	15	2	30	2					45	1
May	15	3	100	9	69	5			184	5
June	20	3							20	1
July	15	3	63	6					78	2
August			31	2	70	5			101	3
September	32	5	32	3	120	8	130	15	314	8
October	114	19	153	14	195	13	159	18	621	15
November	96	16	345	30	67	4			508	12
December	169	27	209	18	137	9			515	12
Total	612	100	1146	100	1478	100	886	100	4122	100

Number of Heifers Sold by Months and Size Group. There were 2,403 deferred heifers sold of which 2,354 were purchased and 49 were raised. Thirty-nine percent of all the heifers were sold in November, 27 percent in October and 15 percent in December. Almost half of the heifers sold were in the 50-129 size group.

Table 10. Number and percent of deferred heifers in 50 sales by size group during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Group								All groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
January	32	8	40	12	67	6			139	6
June	15	3							15	1
July	8	2							8	
August	24	6			52	5			76	3
September	35	9			172	15			207	9
October	58	14	160	49	431	38			649	27
November	181	45	30	9	335	29	400	76	946	39
December	52	13	96	30	85	7	130	24	363	15
Total	405	100	326	100	1142	100	530	100	2403	100

Number of Mixed Cattle Sold by Month and Size Group. Of the 602 deferred mixed cattle sold, only 85 were purchased as mixed cattle; the 517 remaining cattle were raised or were separated from the steer and heifer deferred systems (Table 11). Seventy percent of all sales were from the 0-29 size group, 18 percent from the 30-49 size group, and 12 percent from the 50-129 size group. There were no sales in the 130 and over size group.

Table 11. Number and percent of deferred mixed cattle in 33 sales by size group during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Groupe						All groups	
	0-29		30-49		50-129			
	No.	%	No.	%	No.	%	No.	%
January	108	26	49	44			157	26
February	69	16	30	27			99	17
March	15	3	32	29			47	8
July	38	9					38	6
September	22	5					22	4
October	68	16					68	11
November	36	9			68	100	104	17
December	67	16					67	11
Total	423	100	111	100	68	100	602	100

Number Sold by Sex, Size Group and Type of Market. Of the deferred steers sold, 97 percent were sold at terminal markets, 2 percent at auctions and 1 percent delivered. Eighty percent of the deferred heifers were sold at terminal markets, 13 percent direct, 6 percent at auctions, and 1 percent delivered. Ninety-nine percent of the mixed deferred cattle were sold at terminal markets.

Grade of Cattle Sold by Sex and Size Groupe. Seventy-eight percent of the deferred steers graded choice, 21 percent graded good, and 1 percent graded fancy (Table 13). Of the total heifers sold, 80 percent graded choice, 15 percent graded good and 5 percent graded fancy. For the mixed cattle sales, 65 percent graded choice, 34 percent good and 1 percent common. Thirty-six percent of the steers were in the 50-129 size group, 28 percent

in the 30-49 size group, 22 percent in the 130 and over size group and 15 percent in the 0-29 size group. Forty-seven percent of the deferred heifers were in the 50-129 size group, 22 percent in the 130 and over size group, 17 percent in the 0-29 size group and 14 percent in the 30-49 size group. More than half of the mixed cattle sales were from the 0-29 size group.

Table 12. Type of market for deferred cattle in 183 sales by sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Sales	Type of Market: Auction		Terminal		Direct		Delivered		All markets
	No.	No.	%	No.	%	No.	%	No.	%	No.
Steers:										
0-29	39	19	03	593	97					612
30-49	32			1116	97			30	03	1146
50-129	24	69	05	1409	95					1478
130 & over	5			886	100					886
Total	100	88	02	4004	97			30	01	4122
Heifers:										
0-29	23	54	13	326	81			25	06	405
30-49	9	100	31	178	54	48	15			326
50-129	16			881	77	261	23			1142
130 & over	2			530	100					530
Total	50	154	06	1915	80	309	13	25	01	2403
Mixed Cattle:										
0-29	29			418	99			05	01	423
30-49	3			111	100					111
50-129	1			68	100					68
Total	33			597	99			5	01	602

Average Weight of Cattle Sold by Grade, Sex and Size Group. The average weight of the deferred steers sold was 1,041 pounds, for deferred

heifers 879 pounds and for the deferred mixed cattle 1,006 pounds (Table 14).

It appears that choice cattle were heavier than the other grades.

Table 13. Number and percent of all deferred cattle in 183 sales by grade, sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Grade								All grades	
	Fancy		Choice		Good		Common			
	No.	%	No.	%	No.	%	No.	%	No.	%
Steers:										
0-29	24	4	512	84	76	12			612	100
30-49	32	3	1052	92	62	5			1146	100
50-129			1113	75	365	25			1478	100
130 & over			527	60	359	40			886	100
Total	56	1	3204	78	862	21			4122	100
Heifers:										
0-29			390	96	15	4			405	100
30-49			246	76	80	24			326	100
50-129	117	10	888	78	137	12			1142	100
130 & over			400	76	130	24			530	100
Total	117	5	1924	80	362	15			2403	100
Mixed Cattle:										
0-29			261	62	155	37	7	1	423	100
30-49			62	60	49	44			111	100
50-129			68	100					68	100
Total			391	65	204	34	7	1	602	100

Number of Days, Average Weight, Average Gain per Head by Sex and Size Group in the Wintering Phase. There were 3,964 steers,[1] 2,306 heifers, 850 mixed cattle or a total of 7,120 head of cattle at the beginning of the

[1] The numbers of cattle reported here are different from either the number purchased or sold, because these figures include calves raised. The difference in numbers is also partly because of the combination or separation of sex classes either when they were purchased, sold or fed in the feed lot.

Table 14. Number and average weights of deferred cattle in 183 sales by grade, sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Cattle	Grade				All grades
		Fancy	Choice	Good	Common	
	No.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:						
0-29	612	1025	1068	880	—	1015
30-49	1146	960	1110	980	—	1087
50-129	1478	—	1025	1093	—	1038
130 & over	886	—	1207	1105	—	1166
Total	4122					1041
Heifers:						
0-29	405	—	862	750	—	850
30-49	326	—	888	975	—	917
50-129	1142	907	891	807	—	879
130 & over	530	—	875	925	—	900
Total	2403					879
Mixed Cattle:						
0-29	423	—	1027	962	948	995
30-49	111	—	1080	1150	—	1103
50-129	68	—	891	—	—	891
Total	602					1005

wintering phase; at the end of the phase there were 7,095 head. There was a decrease of 25 cattle during the phase and this may be accounted for by death loss and cattle butchered for home use.

The average length of the wintering phase varied by the sex of the animal. The average number of days in phase for steers was 160 days, 175 days for heifers and 182 days for mixed cattle. For all cattle, the average length for this phase was 172 days.

The average weights for steers were somewhat higher than those for heifers and mixed cattle. For steers, the average weight at the beginning

of tha phase was 541 pounds; haifers, 408 pounds; and mixed cattle, 417 pounds. The average weights at the and of tha phasa were 704 pounds for steers, 570 pounds for heifers and 577 pounds for mixed cattla. The avarage gain per head during the phasa was 164.8 pounds for steers, 156.3 pounds for heifers, and 159.3 pounds for mixed cattle. This mada an avarage daily gain per head of 1.03 pounds for steers, .89 pounds for heifers and .86 pounds for mixed cattle. The average daily gain for all dafarred cattle in the wintering phase was .93 pounds.

Steers and haifers were in all siza groupa. However, most of them were in the 50-129 and 130 and over aize groups, whereas, the defarred mixad cattle were in the three smaller groups, mainly the 0-29 and 30-49 eize groupe.

Number of Daye, Average Weight and Average Gain per Head by Sex and Size Group in Grazing Phasa. A total of 7,013[1] deferred cattle were used in the grazing phaae. There were 3,838 steers, 2,295 heifers and 880 mixed cattle at the beginning of tha phase. The total number of cattle at tha end of the phase was 6,994 of which 3,826 were steers, 2,290 were heifers and 878 were mixed cattle. For all cattla, the average langth of thie phase was 128 days (Table 16). The average number of days of the grazing phase for deferred steers was 121, with an average of 122 daya for deferred heifers and an averaga of 146 days for deferred mixed cattle.

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1 The grazing phase follows the wintering phasa in the deferred program. The wintering phaee reported 7,095 cattle, the grazing 7,013. This difference ie due to the fact that some salee were made from the wintering group.

Table 15. Number of days in the wintering phase, number, weight and gain during this phase by sex and size groups for the deferred method of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Av. no. days in phase	Number of head		Average weight		Average gain/head	
		Beg. of phase	End. of phase	Beg. of phase	End. of phase	Phase	Daily
	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:							
0-29	176	201	200	529	708	186.5	1.06
30-49	152	585	581	523	678	158.6	1.04
50-129	152	1620	1615	537	693	153.4	1.01
130 & over	158	1558	1556	576	738	160.7	1.02
Total		3964	3952				
Average	160			541	704	164.8	1.03
Heifers:							
0-29	165	106	106	437	599	148.6	.90
30-49	180	190	190	406	555	147.3	.82
50-129	177	967	957	388	568	181.0	1.02
130 & over	176	1043	1042	401	559	148.3	.84
Total		2306	2295				
Average	175			408	570	156.3	.89
Mixed Cattle:							
0-29	187	317	317	435	590	155.9	.83
30-49	186	398	396	456	608	149.7	.80
50-129	182	135	135	361	533	172.4	.95
130-& over							
Total		850	848				
Average	185			417	577	159.3	.86
Total		7120	7095				
Average	172			459	621	160.2	.93

The average weights at the beginning of the grazing phase were 710 pounds for steers, 570 pounds for heifers and 590 pounds for mixed cattle. The average weights at the end of the phase were 875 pounds for steers, 734 pounds for heifers and 735 pounds for mixed cattle. The average gain per

head of 193.4 pounds for mixed cattle was more than the 168.1 pound gain per head for steers and 169.0 pounds for heifers. This may be explained in part in that the average length of days in the grazing phase was greater for the mixed cattle than the length of phase for steers and heifers. For all deferred cattle in the grazing phase, the average daily gain was 1.37 pounds. There was only a small difference in average daily gain between sex groups as the average daily gain per head for steers was 1.39 pounds, 1.39 pounds for heifers and 1.32 pounds for mixed cattle.

Steers and heifers were in all size groups, whereas, the deferred mixed were only in the three small size groups. Most of the steers and heifers were in the medium and large size groups, while the mixed cattle were mainly in the small and medium small size groups.

Number of Days, Average Weight, and Average Gain per Head by Sex and Size Group in Dry Lot Phase. A total of 6,830[1] deferred cattle were used in the dry lot phase (Table 17). There were 3,793 steers, 2,170 heifers and 867 mixed cattle at the beginning of the phase. The dry lot phase had an average length of 93 days. The average number of days for deferred steers was 99 days, with an average of 80 days for deferred heifers and an average of 102 days for deferred mixed cattle. The total number of cattle at the end of the phase was 6,827 of which 3,791 were steers, 2,169 heifers and 867 mixed cattle. The average weight at the beginning of the phase was

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1 The dry lot phase follows the grazing phase in the deferred program. Here again there is some difference in cattle number which can be explained by sales. At the end of the grazing phase, there were 6,994 cattle and at the beginning of the dry lot phase there were 6,830 head.

Table 16. Number of days in the grazing phase, number, weight and gain during this phase by sex and size groups for the deferred method of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Av. no. days in phase	Number of head		Average weight		Average gain/head	
		Beg. of phase	End. of phase	Beg. of phase	End. of phase	Phase	Daily
	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:							
0-29	100	200	200	708	830	126.2	1.26
30-49	121	581	580	678	841	160.6	1.33
50-129	126	1809	1801	686	854	169.5	1.35
130 & over	135	1248	1245	768	976	216.1	1.60
Total		3838	3826				
Average	121			710	875	168.1	1.39
Heifers:							
0-29	127	106	106	599	750	165.8	1.31
30-49	104	190	190	555	714	158.0	1.52
50-129	116	957	953	568	719	152.5	1.31
130 & over	140	1042	1041	559	754	199.8	1.43
Total		2295	2290				
Average	122			570	734	169.0	1.39
Mixed Cattle:							
0-29	127	317	316	590	749	158.4	1.25
30-49	176	339	338	600	677	186.8	1.07
50-129	134	224	224	580	780	235.3	1.76
130 & over							
Total		880	878				
Average	146			590	735	193.5	1.32
Total		7013	6994				
Average	128			626	786	175.4	1.37

876 pounds for steers, 734 pounds for heifers and 775 pounds for mixed cattle. The average weights at the end of the phase were 1,091 pounds for steers, 885 pounds for heifers, and 990 pounds for mixed cattle. The average daily gain per head was 2.16 pounds for steers, 2.14 pounds for mixed cattle and for heifers, 1.88 pounds.

Table 17. Number of days in the dry lot phase, number, weight and gain during this phase by sex and size groups for the deferred method of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Av. no. days in phase	Number of head: Beg. of phase	Number of head: End of phase	Average weight: Beg. of phase	Average weight: End of phase	Average gain/head: Phase	Average gain/head: Daily
	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:							
0-29	95	195	195	830	1031	193.9	2.04
30-49	95	547	547	846	1071	218.7	2.30
50-129	111	1990	1988	857	1095	236.9	2.13
130 & over	95	1061	1061	972	1168	205.9	2.17
Total		3793	3791				
Average	99			876	1091	213.9	2.16
Heifers:							
0-29	89	106	106	750	912	164.3	1.85
30-49	68	190	189	714	827	106.3	1.56
50-129	90	953	953	719	889	171.4	1.90
130 & over	73	921	921	754	913	158.9	2.18
Total		2170	2169				
Average	80			734	885	150.2	1.88
Mixed Cattle:							
0-29	110	342	342	747	990	235.8	2.14
30-49	121	301	301	799	1057	255.4	2.11
50-129	76	224	224	780	932	163.6	2.15
130 & over							
Total		867	867				
Average	102			775	990	218.3	2.14
Total		6830	6827				
Average	93					191.9	2.06

Number of Days, Average Weight and Average Gain by Phase. Of the three phases involved in the deferred program, the wintering phase was the longest with an average of 172 days. The grazing phase averaged 128 days and the dry lot phase averaged 93 days (Table 18).

Table 18. Number of days, number, weight and gain by phase and sex for the deferred method of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954 -57.

Phase and sex	Av.no. days in phase	Number of head			Weight		Total gain/head	
		Beg. of phase	died dur. ph	End. of ph	Beg. of phase	End. of phase	Phase	Daily
	No.	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Winter Phase:								
Steers	160	3964	11	3952*	541	704	164.8	1.03
Heifers	175	2306	11	2295	408	570	156.3	.89
Mixed Cattle	185	850	2	848	417	577	159.3	.86
Total		7120	24	7095*				
Average	172				455	617	160.1	.93
Grazing Phase:								
Steers	121	3838	12	3826	710	875	168.1	1.39
Heifers	122	2295	5	2290	570	734	169.0	1.39
Mixed Cattle	146	880	2	878	590	735	193.5	1.33
Total		7013	19	6994				
Average	128				623	781	176.9	1.36
Dry Lot Phase:								
Steers	99	3793	2	3791	876	1091	213.9	2.16
Heifers	80	2170	1	2169	734	885	150.2	1.88
Mixed Cattle	102	867	-	867	775	990	218.3	2.14
Total		6830	3	6827				
Average	93				795	989	194.1	2.06
Total		20963	46	20916*				
Average	132				625	796	177.0	1.34

* One steer unaccounted for.

For all phases, the wintering phase had the smallest average gain per head and also the smallest average daily gain during the phase. The average daily gains were 2.06 pounds for dry lot, 1.36 pounds for grazing and .93 pounds for wintering.

Forty-six cattle died and one steer was unaccounted for in the entire program. It could have been slaughtered for home use. The largeet death loes occurred during the wintering phase.

The average gain per head for all phaees was 177 pounds. The largest gain per head of 194.1 pounds occurred during the dry lot phase. The average gain for the grazing phase was 176.9 pounds with 160.1 pounds per head for the wintering phase.

Feed Fed in All Phaees - All Cattle. Table 19 gives the feed fed per head for all cattle for all three phasee of the deferred program. The heifers received more corn during the wintering and less in the grazing and dry lot phasee than did the steers or mixed cattle. The steers and mixed cattle consumed about 37 buehels of corn per head, which was about 12 bushels more than the amount received by the heifers. All cattle consumed about the same amount of cottonseed meal; however, heifers consumed considerably larger amounts of commercial feed. Mixed cattle consumed the largest amount of alfalfa; steers consumed somewhat less, and heifers consumed only a small amount. There was not much difference for any cattle in the consumption of prairie hay, silage, salt and prepared minerals. The heifers were allowed slightly more pasture than the steers, but considerably more than mixed cattle.

Heifers had very little other pasture, whereas, eteers elightly more and mixed cattle considerably more. However, even coneidering other pasture the total pasture per head for mixed cattle was still less than for steers and heifers.

Table 19. Feed consumption per head in all phases for all deferred cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Phase			All phases
		Winter	Graze	Dry Lot	
Steers:					
No. of farms	No.	61.0	61.0	61.0	
No. of head	No.	3904.0	3838.0	3793.0	
Av. No. head	No.	65.0	63.0	62.0	
Corn	Bu.	3.0261	3.4578	30.4634	36.9473
Cottonseed Meal	Cwt.	.4526	.2241	.4984	1.1751
Commercial Feed	Cwt.	.2911	.0842	.6525	1.0278
Alfalfa	Tons	.3675	.0007	.1150	.4832
Prairie Hay	Tons	.1148		.0676	.1824
Silage	Tons	1.0159	.0041	.2278	1.2478
Salt & Pre.Min.	Cwt.	.0641	.0617	.0562	.1820
Native Pasture	Acres	.5898	3.4638	.7951	4.8487
Other Pasture	Acres	1.0168	.2199	.0172	1.2539
Bedding	Tons	.0050		.0019	.0069
Heifers:					
No. of farms	No.	26.0	26.0	26.0	
No. of head	No.	2306.0	2295.0	2170.0	
Av. No. head	No.	89.0	88.0	84.0	
Corn	Bu.	8.1583	2.8122	10.7412	21.7117
Cottonseed Meal	Cwt.	1.1342	.0458	.2773	1.4573
Commercial Feed	Cwt.	.3010	.5712	4.2535	5.1257
Alfalfa	Tons	.2299	.0083	.0035	.2417
Prairie Hay	Tons	.1494		.0408	.1902
Silage	Tons	1.3062		.1104	1.4166
Salt & Pre.Min.	Cwt.	.0381	.0288	.0350	.1019
Native Pasture	Acres	1.6088	3.8837	.5161	6.0086
Other Pasture	Acres	.4445	.0466		.4911
Mixed Cattle:					
No. of farms	No.	29.0	29.0	29.0	
No. of head	No.	850.0	880.0	867.0	
Av. No. head	No.	29.0	31.0	30.0	
Corn	Bu.	5.8953	2.9070	27.8121	36.6144
Cottonseed Meal	Cwt.	.4471	.2974	.5944	1.3389
Commercial Feed	Cwt.	.1541	.1341	.7993	1.0875
Alfalfa	Tons	.7931	.0296	.2271	1.0498
Prairie Hay	Tons	.1270	.0077	.0701	.2048
Silage	Tons	1.2351		.2236	1.4587
Salt & Pre.Min.	Cwt.	.0930	.0784	.0681	.2395
Native Pasture	Acres	.0576	2.6739	.0750	2.8065
Other Pasture	Acres	1.1130	.5034		1.6164
Bedding	Tons	.0024			.0024

Table 19 also demonstrates that during the wintering phase the heifers consumed more grain than the steers or mixed cattle. Also the mixed cattle consumed less grain than the heifers, but more than steers in this phase.

The feed consumed for all deferred cattle in Table 20 is on a per hundred pounds of gain basis. Along with the other feeds fed the steers received 1.9 bushels of corn during the grazing phase and 13.6 bushels during the dry lot phase per hundred pounds of gain. The heifers consumed 3.6 bushels of corn during the wintering phase, 3.1 bushels during the grazing phase, and 8.9 bushels during the dry lot phase. The mixed cattle received 3.8 bushels during the wintering phase, 1.6 bushels during the grazing phase and 12.5 bushels during the dry lot phase. The amount of corn fed per hundred pounds of gain for the entire program was 6.49 bushels for steers, 6.48 bushels for mixed cattle, and 5.08 bushels for heifers.

Wintered to be Full Fed

Number of Steers Purchased by Months and Size Groups. In 25 purchases farmers reported a total of 1,200 steers purchased during various months of the year. The predominant months for the purchases were October, November and December. Fewer numbers were purchased in January, September, August and July. Most of the steers were in the 50-129 size group.

Number of Heifers Purchased by Months and Size Groups. In 19 purchases, farmers reported 787 heifers to be wintered and full fed. The largest number of heifers was in the 50-129 size group. Eighty-six percent

Table 20. Feed consumption per hundred pounds gain in all phases for all deferred cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Phase			Program average
		Winter	Graze	Dry Lot	
Steers:					
No. of farms	No.	61.0	61.0	61.0	
No. of head	No.	3964.0	3838.0	3793.0	
Av. No. head	No.	65.0	63.0	62.0	
Corn	Bu.	1.9071	1.9151	13.6457	6.4965
Cottonseed Meal	Cwt.	.2860	.1242	.2232	.2098
Commercial Feed	Cwt.	.1840	.0466	.2023	.1824
Alfalfa	Tons	.2323	.0004	.0515	.0875
Prairie Hay	Tons	.0726		.0295	.0326
Silage	Tons	.6420	.0023	.1020	.2264
Salt & Pre Min.	Cwt.	.0405	.0342	.0252	.0325
Native Pasture	Acres	.3727	1.9184	.3562	.8605
Other Pasture	Acres	.6426	.1218	.0077	.2280
Bedding	Tons	.0032		.0008	.0012
Heifers:					
No. of farms	No.	26.0	26.0	26.0	
No. of head	No.	2306.0	2295.0	2170.0	
Av. No. head	No.	89.0	88.0	84.0	
Corn	Bu.	3.5768	3.1444	8.9103	5.0759
Cottonseed Meal	Cwt.	.7041	.0262	.1733	.2968
Commercial Feed	Cwt.	.1868	.3270	2.6586	1.0036
Alfalfa	Tons	.1427	.0047	.0219	.0558
Prairie Hay	Tons	.0928		.0259	.0388
Silage	Tons	.8109		.0690	.2905
Salt & Pre.Min.	Cwt.	.0237	.0164	.0219	.0205
Native Pasture	Acres	.9988	2.2233	.3226	1.2276
Other Pasture	Acres	.2759	.0267		.1011
Bedding	Tons	.0022		.0009	.0010
Mixed Cattle:					
No. of farms	No.	29.0	29.0	29.0	
No. of head	No.	850.0	880.0	867.0	
Av. No. head	No.	29.0	31.0	30.0	
Corn	Bu.	3.7968	1.5982	12.4991	6.4889
Cottonseed Meal	Cwt.	.2879	.1012	.1856	.1846
Commercial Feed	Cwt.	.0993	.0663	.3544	.1888
Alfalfa	Tons	.3373	.0161	.1024	.1363
Prairie Hay	Tons	.0818	.0041	.0312	.0357
Silage	Tons	.7955		.0998	.2527
Salt & Prs.Min.	Cwt.	.0599	.0416	.0304	.0420
Native Pasture	Acres	.0371	1.4180	.0335	.5013
Other Pasture	Acres	.7168	.2670		.2823
Bedding	Tons	.0015			.0004

of the heifers were purchased in the fall months of September, October and November with 53 percent of the purchases occurring in October, and 14 percent of them occurring in February and March.

Table 21. Number and percent of steers to be wintered and full fed in 25 purchases by size group during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Groups								All groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
January			82	25					82	7
July	25	17							25	2
August					55	10			55	5
September	27	19			52	9			79	6
October	92	64	141	43	160	28			393	33
November			33	10	127	23	163	100	323	27
December			73	22	170	30			243	20
Total	144	100	329	100	564	100	163	100	1200	100

Table 22. Number and percent of heifers to be wintered and full fed in 19 purchases by size group during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Groups								All groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
February					62	18			62	8
March	6	23	43	32					49	6
September	20	77					139	50	159	20
October			48	35	224	65	140	50	412	53
November			45	33	60	17			105	13
Total	26	100	136	100	346	100	279	100	787	100

Number of Mixed Cattle Purchased by Months and Size Groups. All of the mixed cattle purchased were in the 0-29 and 50-129 size groups. All of the mixed cattle in the 50-129 size group were purchased in November, and in the 0-29 size group two-fifths of the cattle were purchased in October with a fewer number purchased in November, September and April.

Table 23. Number and percent of mixed cattle to be wintered and full fed in 7 purchases by size groups during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Groups				Both groups	
	0-29		50-129			
	No.	%	No.	%	No.	%
April	9	11			9	5
September	18	22			18	9
October	36	43			36	19
November	20	24	110	100	130	67
Total	83	100	110	100	193	100

Type of Market for Cattle Purchased by Sex and Size Groups. The sources of purchases for all wintered and full fed cattle were auctions, terminal markets, direct, delivered, and commission men (Table 24). Over half of the steers were purchased at terminal markets, and none of them were purchased direct. Heifers were purchased at auctions, terminal markets and direct while some mixed cattle were purchased from all sources.

Grade of Cattle Purchased by Sex and Size Group. Fifty-four percent of the steers purchased graded choice, 24 percent good and 22 percent common (Table 25). Almost equal numbers of heifers purchased graded choice and good while a small number graded common. All of the mixed cattle graded choice.

Table 24. Type of market for cattle to be wintered and full fed in 51 purchases by sex and size groups in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size of herd	Purch.	Type of Market: Auction		Terminal		Direct		Delivered		All markets	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%
Steers:											
0-29	7	99	69	45	31	—	—	—	—	144	100
30-49	9	67	20	220	67	—	—	42	13	329	100
50-129	8	52	9	402	71	—	—	110	20	564	100
130 & over	1	—	—	—	—	—	—	315	100	163	100
Total	25	218	18	667	56	—	—	315	26	1200	100
All heifers:	11	285	36	309	39	193	25	—	—	787	100
All mixed cattle:	7	25	13	130	68	20	10	18	9	193	100
Total	43	528	24	1106	51	213	10	333*	15	2180	100

* Includes 205 steers purchased through commission men.

Table 25. Number and percent of cattle to be wintered and full fed in 51 purchases by sex, grade, and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Grade: Choice		Good		Common		All grades	
	No.	%	No.	%	No.	%	No.	%
Steers:								
0-29	80	56	52	36	12	8	144	100
30-49	187	57	69	21	73	22	329	100
50-129	219	39	166	29	179	32	564	100
130 & over	163	100					163	100
Total	649	54	287	24	264	22	1200	100
All heifers:	358	45	369	47	60	8	787	100
All mixed cattle:	193	100					193	100
Total	1200	55	656	30	324	15	2180	100

Average Weight of Cattle Purchased by Grade, Sex and Size Groups. The average weight for the steers purchased was 666 pounds, for heifers 506 pounds and for mixed cattle 477 pounds (Table 26).

There was only a slight difference in the average weight of steers between the different grades. The average weight of the steers that graded common was 695 pounds, good 662 pounds and choice 653 pounds.

The weights for the heifers were 535 pounds for choice, 503 pounds for good and 408 pounds for common.

Table 26. Average weight of cattle to be wintered and full fed in 51 purchases by grade, sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Cattle	Grade			All grades
		Choice	Good	Common	
	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:					
0-29	144	586	782	734	676
30-49	329	683	713	660	681
50-129	564	667	550	713	635
130 & over	163	724			724
Average weight		653	662	695	666
All heifers:	787	535	503	408	506
All mixed cattle:	193	477			477

Number of Cattle Sold by Months, Sex and Size Groups. A total of 1,337 steers, 808 heifers and 336 mixed cattle were sold in 66 sales (Table 27). Steers and heifers were sold from all size groups and mixed cattle were sold from all size groups except the 130 and over. The greatest numbers of steers were sold in June, May, July, September and April with fewer sales in August, January and February. The heifers were

sold in July, June, September, Auguet and May, with May having the least number of salee. More than half of the mixed cattle were sold in July with some eales in January, February, April and June.

Table 27. Number and percent of cattle to be wintered and full fed in 66 sales by eex and eize group during the various months of the year in selected counties in type of farming areae 3, 4, 5 and 8, Kansae, 1954-57.

Sex and month	Size Group								All groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
Steers:										
January	27	9							27	2
February	27	9							27	2
April	25	8	66	15	51	11			142	11
May	29	10	188	44	50	11			267	20
June	41	13	66	15	244	54			351	26
July	25	8	110	26	109	24			244	18
August	66	22							66	5
September	63	21					150	100	213	16
Total	303	100	430	100	454	100	150	100	1337	100
Heifers:										
May					60	19			60	7
June	38	26	131	63					169	21
July	6	4	76	37	98	30	136	100	316	39
August					113	35			113	14
September	100	70			50	16			150	19
Total	144	100	207	100	321	100	136	100	808	100
Mixed:										
January	20	12							20	6
February	18	11							18	5
April	17	11							17	5
June	41	25	30	47					71	21
July	66	41	34	53	110	100			210	63
Total	162	100	64	100	110	100			336	100
Total	609		701		885		286		2481	

Number Sold by Sex, Size Group and Type of Market. All of the steers were sold at terminal markets (Table 28). Sixty-four heifers were sold at auctions, 515 were sold at terminal markets, 165 were delivered, and 64 were not accountable. All mixed cattle were sold at terminal markets.

Table 28. Type of market for cattle to be wintered and full fed in 66 sales by sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Sales	Type of Market			All markets
		Auction	Terminal	Delivered	
	No.	No.	No.	No.	No.
Steers:					
0-29	16		303		303
30-49	12		430		430
50-129	8		604		604
Total	36		1337		1337
All heifers:	17	64	515	165	808*
Mixed Cattle:					
0-29	10		162		162
30-49	2		64		64
50-129	1		110		110
Total	13		336		336
Total	66	64	2188	165	2481*

* Disposition of 64 head not accounted for.

Grade of Cattle Sold by Sex and Size Group. Ten percent of the steers sold graded prime, 61 percent choice and 29 percent good (Table 29). Four percent of the heifers graded prime, 76 percent choice and 20 percent good. Seventy-nine percent of the mixed cattle graded choice and 21 percent good.

Table 29. Number and percent of cattle to be wintered and full fed in 66 salee by grade, eex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Grade						All grades	
	Prime		Choice		Good			
	No.	%	No.	%	No.	%	No.	%
Steers:								
0-29	88	29	151	50	64	21	303	100
30-49			328	76	102	24	430	100
50-129	50	8	328	54	226	38	604	100
Total	138	10	807	61	392	29	1337	100
Mixed Cattle:								
0-29			124	77	38	23	162	100
30-49			30	47	34	53	64	100
50-129			110	100			110	100
Total			264	79	72	21	336	100
Heifers:								
All eizee	30	4	618	76	160	20	808	100
Total	168	7	1689	68	624	25	2481	100

Average Weight of Cattle Sold by Grade, Sex and Size Groupe. The average weight for all steers sold wae 1,138 pounds. Steers sold as prime averaged 1,260 pounds, which was heavier than any other grade. The average weight for the heifers was 843 pounds and for mixed cattle 870 pounds. Choice heifers and mixed cattle were heavier than those cattle that graded good.

Number of Days, Weight and Gain by Sex and Size Groupe in the Wintering Phase. A total of 2,497 head of cattle were used in this wintered to be full fed system. Of thie total, there were 1,372 steers, 817 heifers and 308 mixed cattle. Almost half of the steers were in the 50-129 size group, although there were some steers in all other size groupe. The

heifers were from all size groups with the majority in the 50-129 and 130 and over size groups. Over half of the mixed cattle were in the 30-49 size group with the remaining number in the 0-29 size group.

The average length of the wintering phase for all wintered to be full fed cattle was 136 days, for steers 131 days, for heifers 152 days, and for mixed cattle 117 days. Seventeen cattle died during the wintering phase. There were 1,361 steers, 811 heifers and 307 mixed cattle at the end of the phase.

At the beginning of the wintering phase, the steers had an average weight of 669 pounds; the heifers, 435 pounds; and the mixed cattle, 526 pounds. The average ending weights were: 863 pounds for steers, 591 pounds for heifers and 596 pounds for mixed cattle. This made an average gain per head of 193.9 pounds for steers, 161.3 pounds for heifers, and 158.9 pounds for mixed cattle. Thus the average daily gain was 1.48 pounds for steers, 1.06 pounds for heifers and 1.36 pounds for mixed cattle.

Table 30. Number and average weights of wintered and full fed cattle in 66 sales by grade, sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Cattle	Grade			All grades
		Prime	Choice	Good	
	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:					
0-29	303	1365	1092	1119	1174
30-49	430		1082	1025	1063
50-129	604	947	1241	1052	1145
Average weight		1260	1135	1072	1138
All heifers:	808	760	919	850	843
Mixed Cattle:					
0-29	162		901	750	841
30-49	64		925	857	891
50-129	110		970		970
Average weight			919	785	870
Total	2481				

Table 31. Number of days, number, weight and gain during the wintering phase for cattle to be full fed by sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex & size group	Av. no. days in phase	Number of head: Beg. of phase	Died dur. ph.	End. of phase	Av. weight: Beg. of phase	End. of phase	Av. gain/head: Phase	Daily
	No.	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:								
0-29	152	165	1	164	644	836	187.4	1.23
30-49	108	254	1	253	654	797	139.2	1.29
50-129	127	639	7	632	654	864	216.8	1.71
130 & over	135	314	2	312	722	955	232.3	1.72
Total		1372	11	1361				
Average	131				669	863	193.9	1.48
Heifers:								
0-29	122	20	-	20	450	550	100.0	.82
30-49	168	78	-	78	427	585	167.4	1.00
50-129	126	440	2	438	483	658	188.0	1.49
130 & over	192	279	4	275	381	570	189.6	.99
Total		817	6	811				
Average	152				435	591	161.3	1.06
Mixed Cattle:								
0-29	94	66	-	66	400	550	151.1	1.61
30-49	139	242	1	241	444	642	166.7	1.19
Total		308	1	307				
Average	117				422	596	158.9	1.36
Total		2497	18	2479				
Average	136				526	701	173.9	1.28

Feed Consumed Per Head for All Cattle. Table 32 gives the consumption per head for various feeds for steers, heifers and mixed cattle on a per head and per hundred pound of gain basis. These cattle were considered separately from all other wintered cattle, in that the cattle in the wintered to be full fed program consumed more grain in the wintering phase than the other cattle in the same phase.

For the feed consumed per head, heifers consumed a little more than seven bushels, steers slightly more than five bushels and mixed cattle about four bushels of corn. Mixed cattle consumed slightly more commercial feed and alfalfa than heifers, and heifers consumed slightly more than the steers. Only a small amount of prairie hay was used in this program. Steers and heifers each consumed about a ton, and mixed cattle about half a ton of silage. Pasture requirements were of lesser importance and there was little differences in these requirements among these cattle. Very little or practically no bedding was used.

The feeds necessary for one hundred pounds gain followed a similar pattern to that given above in the discussion of the feed per head. Heifers required almost four buehels of corn, steers 2.5 bushels and mixed cattle 2.4 bushels. Heifers consumed slightly more alfalfa and prairie hay than steers, and steers consumed more than mixed cattle. Mixed cattle required slightly more pasture than heifers and steers.

Grazed to be Full Fed

Number of Cattle Purchased by Sex. Fifteen farmers reported a total of 847 cattle purchased to be grazed and full fed (Table 33). Of this total, 713 were steers, 32 were heifers and 102 were mixed cattle. Almost all of the steere were purchased in April, May and June with the few remaining numbers purchased in July and August. All of the heifers were purchased in July and the mixed cattle were bought in March and May.

Table 32. Feed consumption per head and per hundred pound gain during the wintering phase for the wintered to be full fed cattle system by sex in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Sex		
		Steers	Heifers	Mixed cattle
Per head:				
No. of farms	No.	25.0	10.0	9.0
No. of head	No.	1372.0	817.0	308.0
Av. no. head	No.	54.9	81.7	34.2
Corn	Bu.	5.0387	7.1836	3.9815
Commercial feed	Cwt.	.3251	.5018	.6006
Alfalfa	Tons	.1674	.2177	.4390
Prairie hay	Tons	.0092	.0220	
Silage	Tons	.9755	.9872	.4959
Salt & pre.min.	Cwt.	.0824	.0930	.0584
Native pasture	Acres	.1567	.3684	.0877
Other pasture	Acres	1.7624	1.3611	1.7240
Bedding	Tons	.0102		
Per cwt. gain				
No. of farms	No.	25.0	10.0	9.0
No. of head	No.	1372.0	817.0	308.0
Corn	Bu.	2.5097	3.9246	2.4458
Commercial feed	Cwt.	.1619	.2742	.3690
Alfalfa	Tons	.0834	.1189	.2697
Prairie hay	Tons	.0046	.0120	
Silage	Tons	.4859	.5393	.3046
Salt & pre.min.	Cwt.	.0411	.0508	.0359
Native pasture	Acres	.0781	.2013	.0538
Other pasture	Acres	.8778	.7436	1.0591
Bedding	Tons	.0051		

Type of Market for Cattle Purchased by Sex. The major sources for the purchase of cattle to be grazed and full fed were auctions and terminal markets (Table 34).

Forty-eight percent of the steers were purchased at auctions, 39 percent were purchased at terminals and 13 percent delivered. All mixed cattle were purchased at auctions and all heifers were purchased direct.

Table 33. Number and percent of cattle to be grazed and full fed in 16 purchaeee by sex during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Sex						All cattle	
	Steere		Heifers		Mixed			
	No.	%	No.	%	No.	%	No.	%
March					60	59	60	7
April	324	45					324	38
May	142	20			42	41	184	22
June	200	28					200	24
July	30	4	32	100			62	7
August	17	3					17	2
Total	713	100	32	100	102	100	847	100

Table 34. Type of market for cattle to be grazed and full fed in 16 purchases by eex in eelected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex & size group	Purch. reported	Type of Market								All markets	
		Auction		Terminal		Direct		Delivered			
	No.	No.	%	No.	%	No.	%	No.	%	No.	%
All eteers:	13	338	48	280	39			95	13	713	100
All heifere:	1					32	100			32	100
All mixed cattle	2	102	100							102	100
Total	16	440	52	280	33	32	4	95	11	847	100

Grade of Cattle Purchased by Sex. Thirty-seven percent of the steers purchased graded choice, 49 percent good, and 14 percent common (Table 35). All of the heifers graded good, and all mixed cattle graded choice.

Average Weight of Cattle Purchased by Grade and Sex. The average weight for 713 eteers purchased was 628 pounds (Table 36). The average weight for 32 heifers wae 505 pounds and for 102 mixed cattle 425 pounds.

Table 35. Number and percent of cattle to be grazed and full fed in 16 purchases by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Grades: Choice		Good		Common		All grades	
	No.	%	No.	%	No.	%	No.	%
All steers:	267	37	349	49	97	14	713	100
All heifers:			32	100			32	100
All mixed cattle:	102	100					102	100
Total	369	44	381	45	97	11	847	100

Table 36. Number and percent of cattle to be grazed and full fed in 16 purchases by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Cattle	Grades: Choice	Good	Common	All grades
	No.	Lbs.	Lbs.	Lbs.	Lbs.
All steers:	713	738	521	618	628
All heifers:	32		505		505
All mixed cattle:	102	425			425
Total	847				

Number of Cattle Sold by Months and Sex. Of the 864 grazed and full fed cattle sold, 847 were purchased and 17 were raised. Most of the 731 steers were sold in November, March and January (Table 37). Other steer sales were in December, February, October, May and August. All heifers were sold in February and of the 101 mixed cattle, 42 were sold in January and 59 in April.

Table 37. Number and percent of grazed and full fed cattle in 23 sales by sex during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Sex						All cattle	
	Steers		Heifers		Mixed			
	No.	%	No.	%	No.	%	No.	%
January	115	16			42	42	157	18
February	70	9	32	100			102	12
March	123	17					123	14
April					59	58	59	7
May	45	6					45	5
August	43	6					43	5
October	59	8					59	7
November	189	26					189	22
December	87	12					87	10
Total	731	100	32	100	101	100	864	100

Number of Cattle Sold by Sex and Type of Market. Ninety-five percent of the grazed and full fed steers were sold at terminal markets and 5 percent at auctions (Table 38). All mixed cattle and most of the heifers were sold at terminal markets. The remaining heifers sold were delivered.

Table 38. Type of market for grazed and full fed cattle in 23 sales by sex in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Sales	Type of Market			All markets
		Auction	Terminal	Delivered	
	No.	No.	No.	No.	No.
All steers:	18	39	692		731
All heifers:	2		20	12	32
All mixed cattle:	3		101		101
Total	23	39	813	12	864

Number and Grade of Cattle Sold by Sex. Sixty percent of the steers, 38 percent of the heifers, and all of the mixed cattle graded choice (Table 39). Forty percent of the steers and 62 percent of the heifers graded good.

Table 39. Number and percent of grazed and full fed cattle in 23 sales by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Grades				All grades	
	Choice		Good			
	No.	%	No.	%	No.	%
All steers:	435	60	296	40	731	100
All heifers:	12	38	20	62	32	100
All mixed cattle:	101	100			101	100
Total	548	63	316	37	864	100

Average Weight of Cattle Sold by Sex and Grade. The average weight for steers sold was 1,046 pounds, for heifers 877 pounds and for mixed cattle 919 pounds. Choice steers were a little heavier than steers that graded good; however, the heifers sold as good were heavier than those sold as choice.

Table 40. Number and average weight of grazed and full fed cattle sold in 23 sales by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Cattle	Grades		All grades
		Choice	Good	
	No.	Lbs.	Lbs.	Lbs.
All steers:	731	1072	1011	1046
All heifers:	32	827	927	877
All mixed cattle:	101	919		919
Total	864			

Number of Days, Weight and Gain by Size Group in the Grazing Phase. There was a total of 870 cattle in the grazed to be full fed system at the beginning of the grazing phase and 868 head at the end of this phase (Table 41). The average number of days in the phase was 137 during which only two cattle died. The average weight at the beginning of the phase was 555 pounds, and the average weight at the end was 776 pounds with an average gain of 219.5 pounds per head for the entire phase. The average daily gain was 1.60 pounds per head. The 0-29 size group had only 37 cattle; however, the other size groups had a sizeable number.

Table 41. Number of days, number of head and average gain during the grazing phase by size group for the grazed to be full fed method of handling beef cattle in selected counties of Kansas, type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size	Av. no. days in phase	Number of head			Weight		Tot. gain/head	
		Beg. of phase	Died dur. ph.	End. of phase	Beg. of phase	End. of phase	Phase	Daily
	No.	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
0-29	131	37	1	36	500	728	199.0	1.52
30-49	106	284	1	283	619	775	153.0	1.44
50-129	157	349	-	349	602	815	241.1	1.54
130 & over	153	200	-	200	500	785	285.0	1.86
Total		870	2	868				
Average	137				555	776	219.5	1.60

Feeds Fed. Feed consumption per head and per hundred pounds gain is given in Table 42. The grazed to be full fed cattle received more corn and silage, and less cottonseed meal and pasture than did the cattle which were only grazed.

The grazed to be full fed cattle received about three bushels of corn, 77 pounds of commercial feed and 3.5 acres of pasture per head. They also received small amounts of cottonseed meal and salt and prepared minerals per head. About 80 pounds of corn, .26 pounds of cottonseed meal, 35 pounds of commercial feed, a small amount of silage and 1.6 acres of pasture were utilized per hundred pounds of gain.

Feeds fed during the full fed phase of this program were included with the feeds fed during the full feeding phase of the wintered to be full fed cattle (Tables 59, 60 and 61).

Table 42. Feed consumed per head and per hundred pounds gain during the grazing phase for cattle grazed to be full fed in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Per Head	Per hundred pounds gain
No. of farms	No.	15.0	15.0
No. of head	No.	870.0	870.0
Av. no. head per farm	No.	58.0	58.0
Corn	Bu.	3.1322	1.4183
Cottonseed meal	Cwt.	.0057	.0026
Commercial feed	Cwt.	.7713	.3492
Bran	Cwt.	———	———
Silage	Tons	.18391	.0199
Salt & prepared minerals	Cwt.	.0574	.0260
Native pasture	Acres	2.6598	1.2044
Other pasture	Acres	.9218	.4171

Full Fed System

Number of Steers Purchased by Months and Size Groups. In 60 purchases, farmers reported a total of 4,840 cattle purchased to be full fed (Table 43). More than half of the 4,409 steers were in the large size

group. Large numbers of steers were purchased in all months except May and no purchases were reported in June. The largest numbers of steers were purchased in September and October.

Table 43. Number and percent of steers to be full fed in 51 purchases by size groups during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Group								All size groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
January	35	20			101	7	336	13	472	11
February	28	16	44	10	64	5			136	3
March	32	19	61	14	55	4	189	7	337	8
April							205	8	205	5
May	12	7							12	1
July							680	26	680	14
August			34	8	110	8			144	3
September	26	15	236	54	423	30			685	15
October	30	17			135	10	791	31	956	22
November	10	6	32	7	222	16	200	8	464	11
December			31	7	287	20			318	7
Total	173	100	438	100	1397	100	2586	100	4409	100

Number of Heifers and Mixed Cattle Purchased by Months and Size Groups. Heifers were purchased in January, June, August and September. The mixed cattle were purchased in January, March and October. There were no purchases of any cattle for the 30-49 size group.

Type of Market for Purchased Cattle by Sex and Size Group. More than half of the steers purchased to be full fed were purchased at terminal markets (Table 45). Other sources for purchases in order of importance were: delivered, direct, and auctions. All the heifers were purchased at

terminal markets sxcept 16 hsad which were purchased at auctions. The mixed cattls were purchassd at auctions, terminal markets and dirsct.

Table 44. Number and percent of heifsrs and mixsd cattls to be full fed in 9 purchasss by size groups during various months of ths year in selscted counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Group: 0-29		50-129		130 & over		All size groups	
	No.	%	No.	%	No.	%	No.	%
Heifsrs:								
January					200	100	200	53
June			60	46			60	16
August			72	54			72	19
Ssptember	48	100					48	12
Total	48	100	132	100	200	100	380	100
Mixed Cattls:								
January	16	32					16	32
March	18	35					18	35
October	17	33					17	33
Total	51	100					51	100

Table 45. Type of market for cattls to be full fsd in 60 purchases by sex and sizs groups in selected countiss in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size of hsrd	Purch.	Type of Markst: Auction		Terminal		Dirsct		Deliver		All markets
	No.	No.	%	No.	%	No.	%	No.	%	No.
Steers:										
0-29	11	16	4	104	4	28	7	25	3	173
30-49	12	71	19	283	10	44	12	40	5	438
50-129	19	282	77	812	30	110	29	193	24	1397
130 & over	9			1655	56	200	52	546	68	2401
Total	51	369	100	2854	100	382	100	804	100	4409
All heifers:	5	16		364						380
All mixed cattle:	4	22		16		13				51
Total	60	407	8	3234	67	395	8	804	17	4840

Grades of Cattle by Sex and Size Group. For all the steers purchased, 32 percent graded choice, 39 percent good and 29 percent common (Table 46). Nineteen percent of the heifers purchased graded choice, 81 percent good, 70 percent of the mixed cattle graded good.

Table 46. Number and percent of cattle to be full fed in 60 purchases by grade, sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Grade						All grades	
	Choice		Good		Common			
	No.	%	No.	%	No.	%	No.	%
Steers:								
0-29	45	26	100	58	28	16	173	100
30-49	163	37	231	53	44	10	438	100
50-129	809	58	477	34	111	8	1397	100
130 & over			881	37	1520	63	2401	100
Total	1017	23	1689	38	1703	39	4409	100
All heifers:	72	19	308	81			380	100
All mixed cattle:	10	20	36	70	5	10	51	100
Total	1099	23	2033	42	1708	35	4840	100

Average Weight of Cattle Purchased by Sex and Size Group. The average weight for steers purchased was 761 pounds; heifers, 623 pounds and mixed cattle, 538 pounds.

Number of Cattle Sold by Month and Size Group. A total of 5,574 full fed cattle were sold, of which 4,840 were purchased and 734 were raised (Table 48). Of these, 4,426 were steers, 722 were heifers and 242 were mixed cattle. Steers were sold during all months of the year; however, the greatest numbers of them were sold in February, December, January and May.

Table 47. Average weight of cattle to be full fed in 60 purchases by grade, sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size of herd	Cattle	Grade			All grades
		Choice	Good	Common	
	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:					
0-29	173	657	703	720	690
30-49	438	778	774	735	772
50-129	1397	764	834	673	772
130 & over	2401		815	827	819
Total	4409	737	777	753	761
All heifers:	380	700	597		623
All mixed cattle:	51	360	669	325	538
Total	4840				

Table 48. Number and percent of full fed steers in 78 sales by size group during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Group								All size groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
January	34	7			279	21	200	10	513	12
February	56	11	184	30	192	15	590	30	1022	23
March	21	4							21	
April	55	11	116	19	174	13			345	8
May	181	36	31	5	120	9	331	17	663	15
June	56	11	72	12			188	9	316	7
July	24	5	31	5	100	8	201	10	356	8
August	40	8	39	6	109	8			188	4
September					119	9			119	3
October	22	4							22	
November			35	6	123	9			158	4
December	14	3	104	17	110	8	475	24	703	16
Total	503	100	612	100	1326	100	1985	100	4426	100

Of the 722 heifers sold, most of them were sold in October, June and December (Table 49). There were no heifers sold during April, August,

September and November. Over half of the sales came from the 130 and over size group.

Table 49. Number and percent of full fed heifers in 11 sales by size group during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Size Group								All size groups	
	0-29		30-49		50-129		130 & over			
	No.	%	No.	%	No.	%	No.	%	No.	%
January	8	21							8	1
February	4	11							4	1
March	4	11							4	1
May	21	57	32	43					53	7
June							199	42	199	27
July					60	46			60	8
October							279	58	279	39
December			43	57	72	54			115	16
Total	37	100	75	100	132	100	478	100	722	100

All mixed cattle sold were from the small size group. These cattle were sold from January through July (Table 50).

Table 50. Number and percent of full fed mixed cattle in 29 sales during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	0-29 Size Group	
	No.	%
January	16	7
February	19	8
March	30	12
April	53	22
May	36	15
June	54	22
July	34	14
Total	242	100

Number Sold by Sex, Size Group and Type of Market. Steers were marketed at terminal markets, delivered, direct and auctions (Table 51). More than half of the steers were sold at terminal markets. All of the heifers except four delivered, and all mixed cattle except seven sold at auctions, were sold at terminal markets.

Table 51. Type of market for full fed cattle in 118 sales by sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size of herd	Sales	Cattle	Type of Market: Auction		Terminal		Direct		Delivered	
	No.	No.	No.	%	No.	%	No.	%	No.	%
Steers:										
0-29	33	503	11	5	476	18	16	4		
30-49	17	612			533	21	44	10	35	5
50-129	20	1326			696	27	120	26		
130 & over	8	1985	200	95	872	34	275	60	638	95
Total	78	4426	211	100	2577	100	455	100	673	100
All heifers:	11	722			718				4	
All mixed cattle	29	242	7		235					

Number and Grade of Cattle Sold by Sex and Size Group. Fifty-two percent of the steers sold graded good, 44 percent choice and 6 percent prime (Table 52). Fifty-six percent of the heifers graded choice and 44 percent good. Fifty-seven percent of the mixed cattle graded choice, 44 percent good and 6 percent prime.

Average Weight of Cattle Sold by Grade, Sex and Size Group. The steers were considerably heavier than the heifers or mixed cattle (Table 53). There was not very much difference in weights between the grades; however,

the prime steers were the heaviest followed in order by choice and good. The average weights for full fed cattle sold were: steers, 1,096 pounds; heifers, 864 pounds; and mixed cattle, 842 pounds.

Table 52. Number and percent of full fed cattle sold in 118 sales by sex, grade and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Grade						Total all grades	
	Prime		Choice		Good			
	No.	%	No.	%	No.	%	No.	%
Steers:								
0-29			398	79	105	21	503	100
30-49	82	13	348	57	182	30	612	100
50-129	70	5	746	56	510	39	1326	100
130 & over			475	24	1510	76	1985	100
Total	152	4	1967	44	2307	52	4426	100
All heifers:			404	56	318	44	722	100
All mixed cattle:	15	6	121	50	106	44	242	100
Total	167	3	2492	46	2731	51	5390	100

Table 53. Number and average weight of full fed cattle sold in 118 sales by grade, sex and size group in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size of herd	Cattle	Grade			All grades
		Prime	Choice	Good	
	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:					
0-29	503		1084	1063	1078
30-49	612	1215	1120	1082	1123
50-129	1326	1060	1117	1048	1086
130 & over	1985		1075	1122	1109
Total	4426	1163	1100	1079	1096
All heifers:	722		871	860	864
All mixed cattle:	242	880	898	785	842
Total	5390				

Number of Days, Weight and Gain by Sex and Size Group for Cattle Full Fed Under 110 Days. In the full fed system for cattle fed under 110 days, 3,179 cattle were reported (Table 54). The average number of days for these cattle in this length of feeding was 83 days. There were 2,647 steers, 324 heifers and 208 mixed cattle at the beginning of the system. Steers were fed an average length of 95 days; heifers, 97 days; and mixed cattle, 82 days. The total number of cattle at the close of the system was 3,167 of which 2,635 were steers, 324 heifers and 208 mixed cattle. The average beginning weights were: 834 pounds for steers, 660 pounds for heifers and 587 pounds for mixed cattle. Their average ending weights were: 1,087 pounds for steers, 832 pounds for heifers and 790 pounds for mixed cattle.

The average gain for the steers was greater than that for heifers and mixed cattle. Thus the average gain per head was 254.9 pounds for steers, 174.1 pounds for heifers, and 201.8 pounds for mixed cattle. The average daily gain for steers was 2.68 pounds, with 1.80 pounds for heifers and 2.19 pounds for mixed cattle.

Number of Days, Average Weight and Average Gain Per Head by Sex and Size Group for Cattle Fed from 110-139 Days. The full fed system for cattle fed from 110 to 139 days had a total number of 1,635 cattle (Table 55). There were 783 steers, 357 heifers and 495 mixed cattle at the beginning of the phase and 783 steers, 355 heifers and 493 mixed cattle at the end of the phase. The steers were fed an average length of 123 days; heifers, 123 days; mixed cattle, 125 days.

Table 54. Number of days in phase, number, weight and average gain of cattle fed under 110 days by sex and size group for the full fed method of beef production in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Av. no. days in phase	Number of head		Average weight		Average gain/head	
		Beg. of phase	End. of phase	Beg. of phase	End. of phase	Phase	Daily
	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:							
0-29	90	247	247	798	1049	255.3	2.84
30-49	87	413	412	807	1046	238.9	2.74
50-129	105	884	882	906	1130	223.6	2.13
130 & over	98	1103	1094	825	1121	301.8	3.08
Total		2647	2635				
Average	95			834	1087	254.9	2.68
Heifers:							
30-49	92	121	121	569	815	250.8	2.73
50-129	102	203	203	750	848	97.4	.95
Total		324	324				
Average	97			660	832	174.1	1.80
Mixed cattle:							
0-29	75	78	78	578	758	178.9	2.39
30-49	89	130	130	596	821	224.6	2.52
Total		208	208				
Average	82			587	790	201.8	2.19
Total		3179	3167				
Average	83			729	949	233.9	2.80

The average beginning weight for all cattle was 691 pounds with an ending weight of 952 pounds. This made an average gain of 258.3 pounds per head. The average beginning weights by sex of cattle were: 804 pounds for steers, 638 pounds for heifers and 618 pounds for mixed cattle. The average ending weights were: 1,069 pounds for steers, 891 pounds for heifers, and 880 pounds for mixed cattle. The steers and mixed cattle were in all size groups, whereas, the heifers were from only the three largest size groups.

The average daily gain for steers was 2.14 pounds with 2.05 pounds for heifers and 2.06 pounds for mixed cattle.

Table 55. Average number of days in phase, number, weight and gain by size group of cattle fed from 110 to 139 days, for the full fed method of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Av. no. days in phase	Number of head		Average weight		Av. gain/head	
		Beg. of phase	End. of phase	Beg. of phase	End. of phase	Phase	Daily
	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:							
0-29	123	35	35	726	1026	299.1	2.43
30-49	119	78	78	803	1056	250.3	2.10
50-129	119	320	320	810	1064	256.8	2.16
130 & over	130	350	350	877	1130	248.5	1.64
Total		783	783				
Average	123			804	1069	263.8	2.14
Heifers:							
30-49	131	32	32	620	889	269.0	2.05
50-129	122	50	50	725	939	214.0	1.75
130 & over	117	275	273	570	844	273.7	2.34
Total		357	355				
Average	123			638	891	252.2	2.05
Mixed cattle:							
0-29	135	72	72	523	833	293.5	2.17
30-49	116	83	83	700	958	257.8	2.22
50-129	137	60	59	550	900	350.0	2.55
130 & over	111	280	279	700	828	128.0	1.15
Total		495	493				
Average	125			618	880	257.3	2.06
Total		1635	1631				
Average	124			691	952	258.3	2.07

Number, Weight, and Average Gain by Sex and Size Group for Cattle Fed From 140 - 199 Days. For the cattle full fed from 140 to 199 days there

were 1,722 steers, 553 heifers and 198 mixed cattle at the beginning of the system. Of 2,449 cattle at the close of the system, 1,700 were steers, 552 were heifers and 197 were mixed cattle. The steers were fed an average length of 159 days; heifers, 164 days; and mixed cattle, 164 days. The average length of feeding for all cattle was 162 days. The average weights at the beginning of the phase were: 826 pounds for steers, 591 pounds for heifers, and 613 pounds for mixed cattle. The average weights at the end of the phase were: 1,142 pounds for steers; heifers, 884 pounds; and 908 pounds for mixed cattle. Thus the average gains per head were: 314.3 pounds for steers, 295.4 pounds for heifers and 296.5 pounds for mixed cattle. This made an average daily gain of 1.98 pounds for steers, 1.80 pounds for heifers and 1.81 pounds for mixed cattle. The steers were from all size groups, the heifers were from the small, medium and large size groups, and the mixed cattle were from the small, medium small and medium size groups.

Number of Days, Weight and Gain by Sex and Size Group for Cattle Fed Over 200 Days. In the full fed phase for cattle fed over 200 days, the average length of feeding was 264 days. The average length of the feeding period was 281 days for the steers, 226 days for the heifers, and 249 days for the mixed cattle.

The steers had an average beginning weight of 702 pounds, heifers averaged 475 pounds and mixed cattle averaged 408 pounds. The average ending weights were: 1,092 pounds for steers, 850 pounds for heifers and 816 pounds for mixed cattle. There was a total of 1,688 cattle which

consisted of 1,535 steers, 32 heifers and 120 mixed cattle at the beginning of the phase. There were 1,528 steers, 32 heifers and 120 mixed cattle to comprise a total of 1,680 cattle at the close of the phase.

The steers had the greatest average gain per head and also the greatest length of days in phase. The average gain per head was: 407.3 pounds for steers, 375.0 pounds for heifers, and 381.1 pounds for mixed cattle. The average daily gains were: 1.45 pounds for steers, 1.66 pounds for heifers, and 1.53 pounds for mixed cattle.

The steers were from all size groups, the heifers were from the medium small group, and the mixed cattle were from the small and medium small size groups.

Number of Days, Weight and Average Gain Per Head by Sex and Size Group. A total of 8,975 head of cattle were used for all lengths of feeding for the full feeding system. Of this total, there were 6,687 steers, 1,266 heifers and 1,022 mixed cattle at the beginning of the phase. Forty-seven cattle died during the program of which 40 were steers, three were heifers and four were mixed cattle. One of the steers was not accountable. The average length of days for all cattle fed during the full feeding phase was 156 days. The average length of days in phase was 165 days for steers, 153 days for heifers and 155 days for mixed cattle. The steers made the greatest gain per head. The average gains per head were: 310 pounds for steers, 274.1 pounds for heifers and 287.7 pounds for mixed cattle. However, the average length for the feeding period was greater for steers than for heifers or mixed cattle. The 1.90 pounds average daily gain for heifers was the greatest gain for any cattle. The average daily gain for

steers was 1.88 pounds; heifers, 1.90 pounds; and mixed cattle, 1.86 pounds. The average daily gain for all cattle was 1.86 pounds. The greatest number of steers were in the feeding phase of under 110 days, whereas, the greatest number of heifers were in the feeding phase of 140-199 days and almost half of the mixed cattle were in the period of 110-139 days.

Table 56. Number of days in phase, number, weight and average gain by sex and size groups of cattle fed from 140 to 199 days for the full fed method of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Av. no. days in phase	Number of head		Average weight		Average gain/head	
		Beg. of phase	End. of phase	Beg. of phase	End. of phase	Phase	Daily
	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:							
0-29	142	20	20	1000	1305	305.0	2.15
30-49	164	345	343	775	1125	346.8	2.11
50-129	156	492	491	771	1076	299.0	1.92
130 & over	174*	865	846	756	1060	306.5	1.76
Total		1722	1700				
Average	159			826	1142	314.3	1.98
Heifers:							
0-29	172	36	36	565	845	279.4	1.62
50-129	151	185	185	533	850	308.4	2.04
120 & over	168	332	331	675	958	298.4	1.78
Total		553	552				
Average	164			591	884	295.4	1.80
Mixed cattle:							
0-29	160	47	46	450	793	348.4	2.18
30-49	147	41	41	790	961	171.0	1.16
50-129	186	110	110	600	970	370.0	1.99
Total		198	197				
Average	164			613	908	296.5	1.81
Total		2473	2449				
Average	162			692	994	303.3	

* One head not accounted for.

Table 57. Average number of days in phase, number, weight and average gain by sex and size group of cattle fed over 200 days for the full fed method of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Av. no. days in phase	Number of head		Average weight		Total gain/head	
		Beg. of phase	End. of phase	Beg. of phase	End. of phase	Phase	Daily
	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
200 & over days							
Steers:							
0-29	236	50	50	550	1025	474.0	2.01
30-49	354	64	64	743	1105	364.4	1.03
50-129	259	453	450	698	1190	502.4	1.94
130 & over	273	968	964	815	1047	288.5	1.06
Total		1535	1528				
Average	281			702	1092	407.3	1.45
Heifers:							
30-49	226	32	32	475	850	375.0	1.66
Total		32	32				
Average	226			475	850	375.0	1.66
Mixed cattle:							
0-29	248	54	54	379	810	429.1	1.73
30-49	249	67	66	437	822	333.1	1.34
Total		121	120				
Average	249			408	816	381.1	1.53
Total		1688	1680				
Average	264			585	978	395.2	1.50

Consumption of Feed by Length of Phase for All Cattle. The steers, heifers, and mixed cattle received the same feeds except bran and cottonseed meal during all lengths of phases in the full fed system. Only the steers received bran and this was a very small amount fed during the 110-

129 day phase. The mixed cattle did not receive any cottonseed meal during the 110-129 day and 140-199 day phases.

Table 58. Number of days in phase, number of head, average weight and average gain by sex and size group for all lengths of feeding for the full fed method of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex & no. days in phase	Av. no. days in phase	Number of head			Av. weight		Total gain/head	
		Beg. of phase	Died dur.ph.	End.of phase	Beg.of phase	End. of phase	Phase	Daily
	No.	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:								
Under 110	98	2647	12	2635	834	1087	254.9	2.60
110-139	123	783	—	783	804	1069	263.8	2.14
140-199	159	1722	21	1700	826	1142	314.3	1.98
200 & over	281	1535	7	1528	702	1092	407.3	1.45
Total		6687	40	6646				
Average	165				792	1097	310.0	1.88
Heifers:								
Under 110	97	324	—	324	660	832	174.1	2.45
110-139	123	357	2	355	638	891	252.2	2.05
140-199	164	553	1	552	591	884	295.2	1.80
200 & over	226	32	—	32	475	850		
Total		1266	3	1263				
Average	153				591	864	274.1	1.90
Mixed cattle:								
Under 110	82	208	—	208	587	790	201.8	2.46
110-129	125	495	2	493	816	880	257.3	2.06
140-199	164	198	1	197	613	908	296.5	1.81
200 & over	249	121	1	120	585	978	395.2	1.59
Total		1022	4	1018				
Average	155				650	889	287.7	1.86
Total		8975	47	8927				
Average	156				678	950	290.6	1.86

Corn was the major feed throughout the full fed system. The largest amount of corn consumed was 34 bushels per steer during the 140-199 day

phase with the smallest amount of 22 bushels fed to steers during the 200 and over day phase. It seems rather peculiar in that as the number of days in phase increased from the 140-199 day phase to the 200 day and over phase the amount of corn fed decreased for all full fed cattle. However, the steers in the over 200 day feeding period consumed about 50 pounds more commercial feed. The above is also true for the heifers, as the days in phase increased from under 110 days to 110-139 days there was a decrease of slightly more than 11 bushels of corn fed per head. The average number of bushels of corn was practically the same for steers, heifers and mixed cattle. However, the mixed cattle received slightly more than heifers and steers. The steers were allowed native and other pasture during all lengths of phases, whereas, the heifers were allowed native and other pasture only in the 140-199 day phase. The mixed cattle were allowed native pasture during the under 110 day phase and other pasture during the 110-139 day and 200 day and over phases.

Feed Consumption Per Hundred Pounds Gain by Length of Phase. The feeds fed per hundred pounds of gain were the same as on the per head basis, but with considerable difference in quantities. Again, the corn was the major feed fed. The steers received slightly more than 10 bushels of corn in the under 110 day phase, 11.5 bushels in the 110-139 day phase, 11.1 bushels in the 140-199 day phase, and only six bushels in the 200 day and over phase. The contrast was much greater for the heifers as they received 23.3 bushels during the under 110 day phase with a decrease to 9.4 bushels in the 110-139 day phase, 8.7 bushels in the 140-199 day phase and 13.7 bushels in

Table 59. Feed consumption per head by length of phase for the full fed cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Length of Phase: Under 110 days	110-139	140-199	200 and over	Program average
Steers:						
No. of farms	No.	38.0	11.0	19.0	12.0	
No. of head	No.	2643.0	783.0	1722.0	1535.0	
Av. no. head	No.	69.6	71.2	90.6	127.9	83.5
Corn	Bu.	27.0692	29.3908	34.2922	21.7929	27.9905
Cottonseed meal	Cwt.	.3056	.0613	.1620	.2482	.2269
Commercial feed	Cwt.	.4960	1.5006	.9419	1.4762	.9537
Bran	Cwt.		.0026			.0003
Alfalfa	Tons	.0884	.2246	.3324	.1717	.1864
Prairie hay	Tons	.0320	.0566	.0118	.1264	.0514
Silage	Tons	.1411	.4930	.6297	.9829	.4972
Salt & pre.min.	Cwt.	.0329	.0204	.1754	.0463	.0712
Native pasture	Acres	.1419	.1341	.0105	.0052	.0757
Other pasture	Acres	.1249	.3934	.2351	.1401	.1883
Bedding	Tons	.0052		.0012		.0023
Heifers:						
No. of farms	No.	5.0	4.0	6.0	1.0	
No. of head	No.	324.0	357.0	553.0	32.0	
Av. no.head	No.	64.8	89.3	92.2	32.0	79.1
Corn	Bu.	35.9837	24.7639	26.1017	23.4063	28.1856
Cottonseed meal	Cwt.	.2778	.2045	.0723	1.5000	.1983
Commercial feed	Cwt.	1.5679	.6583	1.2586	.1812	1.1825
Alfalfa	Tons	.0309	.0854	.1066	.0312	.0864
Prairie hay	Tons	.0750	.0699	.0362	.0375	.0654
Silage	Tons	.0370	.0241	.7751	1.1412	.4401
Salt & pre.min.	Cwt.	.0329	.0204	.1754	.0463	.0712
Native pasture	Acres			.5154		.2251
Other pasture	Acres			.0814		.0356
Bedding	Tons	.0052		.0012		.0023
Mixed cattle:						
No. of farms	No.	9.0	8.0	5.0	5.0	
No. of head	No.	208.0	495.0	198.0	121.0	
Av. no. head	No.	23.1	61.9	39.6	24.2	37.9
Corn	Bu.	18.9329	28.3233	39.5240	30.4670	28.8362
Cottonseed meal	Cwt.	.0747			.9642	.1294
Commercial feed	Cwt.	.6927	.7253	.1566	.7438	.6086
Alfalfa	Tons	.2297	.1662	.3078	.4690	.2424
Prairie hay	Tons	.0392	.0061	.0184	.0549	.0212
Silage	Tons	.1202	.2470	.1768	1.8835	.4014
Salt & pre.min.	Cwt.	.0529	.0364	.1010	.0826	.0578
Native pasture	Acres	.0481				.0098
Other pasture	Acres		.0808		.4793	.0959

Table 60. Feed consumption per hundred pounds of gain by sex and length of phase for the full fed method of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Length of Phase: Under 110 days	110-139	140-199	200 and over	Program average
Steers:						
No. of farms	No.	38.0	11.0	19.0	12.0	
No. of head	No.	2643.0	783.0	1722.0	1535.0	
Av. no. head	No.	69.6	71.2	90.6	127.9	
Corn	Bu.	10.3555	11.5543	11.1182	6.0688	9.4838
Cottonseed meal	Cwt.	.1170	.0241	.0525	.0691	.0769
Commercial feed	Cwt.	.1898	.5899	.3054	.4111	.3232
Bran	Cwt.		.0010			.0001
Alfalfa	Tons	.0338	.0883	.1078	.0478	.0631
Prairie hay	Tons	.0123	.0223	.0038	.0352	.0174
Silage	Tons	.0480	.2000	.2042	.0737	.1685
Salt & pre.min.	Cwt.	.0126	.0080	.0569	.0129	.0242
Native pasture	Acres	.0543	.0527	.0034	.0015	.0257
Other pasture	Acres	.0478	.1546	.0763	.0390	.0639
Bedding	Tons	.0020		.0004		.0009
Heifers:						
No. of farms	No.	5.0	4.0	6.0	1.0	
No. of head	No.	324.0	357.0	553.0	32.0	
Av. no. head	No.	64.8	89.3	92.2	32.0	79.1
Corn	Bu.	23.2611	9.4014	8.7018	13.6667	11.2574
Cottonseed meal	Cwt.	.1796	.0776	.0241	.4000	.0779
Commercial feed	Cwt.	.0135	.2499	.4196	.4833	.4649
Alfalfa	Tons	.0200	.0324	.0355	.0833	.0340
Prairie hay	Tons	.0517	.0265	.0121	.1000	.0165
Silage	Tons	.0239	.1748	.0837	.3043	.1730
Salt & pre.min.	Cwt.	.0240	.0032	.0199	.0834	.0180
Native pasture	Acres			.1718		.0885
Other pasture	Acres			.0271		.0140
Bedding	Tons			.0042		.0004
Mixed cattle:						
No. of farms	No.	9.0	8.0	5.0	5.0	
No. of head	No.	208.0	495.0	198.0	121.0	
Av. no. head	No.	23.1	61.9	39.6	24.2	37.9
Corn	Bu.	9.1250	14.1782	12.2781	8.1639	11.7442
Cottonseed meal	Cwt.	.2450			.2261	.0470
Commercial feed	Cwt.	.3290	.3630	.0486	.1993	.2479
Alfalfa	Tons	.1089	.0827	.0941	.1240	.0976
Prairie hay	Tons	.0993	.0030	.0057	.0147	.0086
Silage	Tons	.0579	.1237	.0549	.5047	.1635
Salt & pre.min.	Cwt.	.0476	.0182	.0314	.0221	.0235

the 200 day and over phase. The mixed cattle began with slightly more than nine bushels in the under 110 day phase which increased to a little more than 14 bushels in the 110-139 day phase, 12.3 bushels in the 140-199 day phase and decreased again to 8.2 bushels in the 200 day and over phase.

The steers were allowed native and other pasture during all lengths of phase with heifers receiving native and other pasture only in the 140-199 day phase. The mixed cattle received native and other pasture per head, but the amounts were too small to appear in the per hundred pounds of gain basis.

The previous tables have given the feed consumed per head and per hundred pounds of gain basis by the individual sex of the cattle. In Table 61 all cattle were considered.

The same pattern of feed consumption per head prevailed for all cattle as these cattle were considered separately as to sex. The cattle in the 140-199 day feeding period consumed more corn than the cattle in the two shorter feeding periods, but cattle in the 200 day and over feeding period consumed less corn than those in the shorter feeding periods.

The feed consumption per hundred pounds gain was the smallest during the 200 day feeding period. This was especially true for corn consumed by the cattle. It is possible that the cattle fed 200 days and longer might have more efficient gains, but it is difficult to explain why corn consumption per hundred pounds of gain would be 6.5 bushels for the 200 day and over feeding phase, 10.7 bushels for the 140-199 day phase, 13.1

bushels for 110-139 day phase and 11.2 bushels for the under 110 day feeding period. The other feed consumed per head for the cattle in the 200 day and over period was slightly larger for some of the other feeds, but not great enough to make up the difference in corn consumption of the 200 day and over period and the other feeding periods.

The number of bushels of corn fed per hundred pounds of gain and per head did not increase in all cases as the number of days in phase increased. A little more than 11 bushels was fed per hundred pounds of gain during the under 110 day phase; and 6.5 bushels in the 200 day and over phase. The bushels of corn fed per head and length of phases were: 27.5 bushels, under 110 days; 30.9 bushels, 110-139 days; 32.9 bushels, 140-199 days; and 23 bushels, 200 day and over.

OTHER METHODS OF BEEF PRODUCTION[1]

Wintered

Number of Cattle Purchased by Month and Sex. In 11 purchases, farmers reported a total of 809 cattle obtained for the wintering program (Table 62). Of this total, 494 were steers, 130 were heifers and 185 were mixed cattle. Over half of the steers were purchased in November and December, with the rest purchased in July, September and October. All of the heifers were purchased in September; the mixed cattle were purchased in November and December.

Type of Market for Cattle Purchased by Sex. Ninety percent of the steers were purchased at auctions, 6 percent at terminal markets and 4 percent delivered (Table 63). All of the heifers were purchased at auctions.

[1] Includes wintered, wintered and grazed, grazed, and minor methods of handling beef cattle.

Seventy-three percent of the mixed cattle were purchased direct and 27 percent delivered.

Table 61. Feed consumption per hundred pounds of gain and per head by length of phase for full fed cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Length of Phase			
		Under 110	110-139	140-199	200 & over
Per head:					
No. of farms	No.	52.0	23.0	30.0	18.0
No. of head	No.	3175.0	1635.0	2473.0	1688.0
Av. no. head	No.	61.1	71.1	82.4	93.8
Corn	Bu.	27.4198	30.8914	32.8796	22.9731
Cottonseed meal	Cwt.	.2873	.0815	.1290	.3232
Commercial feed	Cwt.	.6171	1.1912	.9499	1.4301
Bran	Cwt.		.0013		
Alfalfa	Tons	.0917	.1944	.2800	.1957
Prairie hay	Tons	.0374	.0487	.0178	.1260
Silage	Tons	.1159	.4044	.6259	1.0505
Salt & pre. min.	Cwt.	.0346	.0249	.1436	.0539
Native pasture	Acres	.2250	.0707	.1225	.0047
Other pasture	Acres	.1038	.2343	1.1820	.1617
Bedding	Tons	.0044		.0036	
Per cwt.:					
No. of farms	No.	52.0	23.0	30.0	18.0
No. of head	No.	3175.0	1635.0	2473.0	1688.0
Av. no. head	No.	61.1	71.1	82.4	93.8
Corn	Bu.	11.1709	13.1032	10.6885	6.4895
Cottonseed meal	Cwt.	.0582	.0346	.0419	.0914
Commercial feed	Cwt.	.2501	.5053	.3088	.4040
Bran	Cwt.		.0006		
Alfalfa	Tons	.0372	.0825	.0910	.0553
Prairie hay	Tons	.0374	.0487	.0178	.1260
Silage	Tons	.1159	.4044	.6259	1.0505
Salt & pre. min.	Cwt.	.0346	.0249	.1436	.0539
Native pasture	Acres	.2250	.0707	.1225	.0047
Other pasture	Acres	.1038	.2343	1.1820	.1617
Bedding	Tons	.0044		.0036	

Table 62. Number and percent of cattle for wintering in 11 purchases by sex during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Sex						All cattle	
	Steers		Heifers		Mixed cattle			
	No.	%	No.	%	No.	%	No.	%
July	35	7					35	4
September	51	10	130	100			181	22
October	60	12					60	7
November	237	48			50	27	287	36
December	111	23			135	73	246	31
Total	494	100	130	100	185	100	809	100

Table 63. Type of markets for cattle in 11 purchases by sex for the wintering program in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Purch.	Type of Market								All markets	
		Auction		Terminal		Direct		Delivered			
	No.	No.	%	No.	%	No.	%	No.	%	No.	%
All steers	8	443	90	28	6			23	4	494	100
All heifers	1	130	100							130	100
All mixed cattle	2					135	73	50	27	185	100
Total	11	573	71	28	3	135	17	73	9	809	100

Grade of Cattle Purchased by Sex. Sixty-five percent of steers purchased graded choice, 22 percent good, 7 percent fancy and 6 percent common (Table 64). All of the heifers graded choice. Seventy-three percent of the mixed cattle graded choice and 27 percent fancy.

Average Weight of Cattle Purchased by Sex and Grade. The average weight for steers purchased was 499 pounds; heifers, 375 pounds; and mixed cattle, 394 pounds (Table 65). The common steers were the heaviest followed by good, choice and fancy.

Table 64. Number and percent of cattle in 11 purchases for wintering by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Grade: Fancy		Choice		Good		Common		All grades	
	No.	%	No.	%	No.	%	No.	%	No.	%
All steers:	33	7	323	65	110	22	28	6	494	100
All heifers:			130	100					130	100
All mixed cattle:	50	27	135	73					185	100
Total	83	10	588	73	110	14	28	3	809	100

Table 65. Average weight of wintered cattle in 11 purchases by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	No. of head	Grade: Fancy	Choice	Good	Common	All grades
	No.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
All steers:	494	285	452	575	700	499
All heifers:	130		375			375
All mixed cattle:	185	408	380			394
Total	809					

Number of Cattle Sold by Months and Sex. In 24 sales, 491 steers, 142 heifers and 264 mixed cattle were sold (Table 66). Most of the steers were sold in April with fewer numbers in January and March; most of the heifers were sold in May and fewer numbers in April; likewise most of the mixed cattle were sold during May and most of the rest in January through April.

Table 66. Number and percent of wintered cattle in 24 sales by sex during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Sex: Steers		Heifers		Mixed cattle		All cattle	
	No.	%	No.	%	No.	%	No.	%
January	95	19			17	7	112	13
February					19	7	19	2
March	27	6			13	5	40	4
April	369	75	14	10	5	2	388	43
May			128	90	204	77	332	37
June					6	2	6	1
Total	491	100	142	100	264	100	897	100

Number Sold by Sex and Type of Market. Seventy percent of the steers were sold at terminal markets, and 30 percent at auctions (Table 67). Ninety percent of the heifers were delivered and 10 percent were sold at auctions. Eighty-seven percent of the mixed cattle were sold at terminal markets; the rest were sold at auctions and delivered.

Table 67. Type of market for wintered cattle in 24 sales by sex in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Sales:	Type of Market: Auction		Terminal		Delivered		All markets	
	No.	No.	%	No.	%	No.	%	No.	%
All steers:	11	149	30	342	70			491	100
All heifers:	3	14	10			128	90	142	100
All mixed cattle:	10	18	7	229	87	17	6	264	100
Total	24	181	20	571	64	145	16	897	100

Grade of Cattle Sold by Sex. Seventy-three percent of the wintered steers sold graded choice, 20 percent good and 7 percent fancy (Table 68). All the heifers graded choice. Fifty-seven percent of the mixed cattle graded choice, 21 percent good, 19 percent fancy and only 3 percent common.

Table 68. Number and percent of wintered cattle in 24 sales by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Grade								All grades	
	Fancy		Choice		Good		Common			
	No.	%	No.	%	No.	%	No.	%	No.	%
All steers:	33	7	357	73	101	20			491	100
All heifers:			142	100					142	100
All mixed cattle:	50	19	150	57	57	21	7	3	264	100
Total	83	9	649	72	158	18	7	1	897	100

Average Weight of Cattle Sold by Sex and Grade. The average weights for wintered steers sold was 646 pounds, 615 pounds for heifers and 581 pounds for mixed cattle (Table 69). For the steers, it appears that those graded good were heaviest, followed by those graded choice and fancy. For the mixed cattle, those graded fancy were heaviest followed by those graded good, common and choice.

Feeds Fed. The feeds fed were included with the wintering phase of the other methods of cattle production.[1]

[1] Table 55.

Table 69. Number and average weight of wintered cattle in 24 sales by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Cattle	Grade				All grades
		Fancy	Choice	Good	Common	
	No.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
All steers:	491	420	612	793		646
All heifers:	142		615			615
All mixed cattle:	264	640	481	616	550	581
Total	897					

Grazed

Number of Cattle Purchased by Month and Sex. In six purchases, farmers reported a total of 1,242 cattle which consisted of 417 steers and 825 heifers for the grazing system of beef production (Table 70). Sixty-four percent of the steers were purchased in April and 36 percent in March. All of the heifers were purchased in April.

Table 70. Number and percent of cattle in 6 purchases for grazing by sex during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Sex				All cattle	
	Steers		Heifers			
	No.	%	No.	%	No.	%
March	150	36			150	12
April	267	64	825	100	1092	88
Total	417	100	825	100	1242	100

Type of Market for Cattle Purchased by Sex. All of the steers were purchased at auctions while 97 percent of the heifers were delivered and 3 percent were purchased at auctions (Table 71).

Table 71. Type of market for cattle in 6 purchases for grazing by sex in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Cattle	Type of Market: Auction		Type of Market: Delivered		All cattle	
	No.	No.	%	No.	%	No.	%
Steers	4	417	100			417	100
Heifers	2	25	3	800	97	825	100
Total	6	442	36	800	64	1242	100

Grade of Cattle Purchased by Sex. Seventy-eight percent of the steers and 97 percent of the heifers purchased graded good (Table 72). Twenty-two percent of the steers, and 3 percent of the heifers graded common.

Table 72. Number and percent of cattle in 6 purchases for grazing by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Grade: Good		Grade: Common		All grades	
	No.	%	No.	%	No.	%
Steers	327	78	90	22	417	100
Heifers	800	97	25	3	825	100

Average Weight of Cattle Purchased by Sex. The average weight for the steers was 626 pounds and 475 pounds for the heifers. The cattle that

graded good were heavier than the cattle that graded common.

Table 73. Average weight of cattle purchased in 6 purchases for grazing by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Cattle	Cattle		Average weight all grades
		Good	Common	
	No.	Lbs.	Lbs.	Lbs.
Steers	417	643	575	626
Heifers	825	500	450	475

Number of Cattle Sold by Month and Sex. A total of 1,388 grazed cattle were sold in seven sales (Table 74). Eighty percent of the 566 steers and 97 percent of the 822 heifers were sold in September. The other steers were sold in July, October and November; the remaining heifers were sold in October.

Table 74. Number and percent of grazed cattle in 7 sales by sex during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Sex				All cattle	
	Steers		Heifers			
	No.	%	No.	%	No.	%
July	26	5			26	2
September	452	80	797	97	1249	90
October	48	8	25	3	73	5
November	40	7			40	3
Total	566	100	822	100	1388	100

Type of Market of Cattle Sold by Sex. Eighty-four percent of the steers were sold at terminal markets, whereas,16 percent of the steers and all of the heifers were delivered.

Table 75. Type of market of grazed cattle in 7 sales by sex in selected countiee in type of farming areas 3, 4, 5 and 8, Kansae, 1954-57.

Sex	Sales	Type of Market: Terminal		Delivered		All markets	
	No.	No.	%	No.	%	No.	%
Steers:	5	478	84	88	16	566	100
Heifers:	2			822	100	822	100
Total	7	478	34	910	66	1388	100

Grade of Cattle Sold by Sex. Sixty-six percent of the steers graded good, 27 percent choice and 7 percent common (Table 76). All of the heifers graded good.

Table 76. Number and percent of grazed cattle in 7 sales by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Grade: Choice		Good		Common		All grades	
	No.	%	No.	%	No.	%	No.	%
Steers:	152	27	374	66	40	7	566	100
Heifers:			822	100			822	100
Total	152	11	1196	86	40	3	1388	100

Average Weight of Cattle Sold by Sex. The average weight was 901 pounds for the steers and 695 pounds for the heifers (Table 77). The choice steers were considerably heavier than those which graded good and common.

Table 77. Average weight of grazed cattle in 7 salee by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansae, 1954-57.

Sex	Cattle	Grade			All grades
		Choice	Good	Common	
	No.	Lbs.	Lbs.	Lbe.	Lbe.
Steers:	566	1045	837	820	901
Heifers:	822		695		695
Total	1388				

Wintered and Grazed

Number of Cattle Purchased by Months. In 13 purchases, farmers reported a total of 1,212 cattle used for the wintered and grazed system (Table 78). The 886 eteers were purchased in February, September, October, November and December. Forty-one percent of the purchaese occurred during September. All of the heifers were purchased in December; all of the mixed cattle were purchaeed in November.

Table 78. Number and percent of cattle in 13 purchaees for wintering and grazing by sex during varioue months of the year in selected countiee in type of farming areas 3, 4, 5 and 8, Kansae, 1954-57.

Month	Sex						All cattle	
	Steers		Heifers		Mixed cattle			
	No.	%	No.	%	No.	%	No.	%
February	40	4					40	3
September	360	41					360	30
October	133	15					133	11
November	85	10			286	100	371	31
December	268	30	40	100			308	25
Total	886	100	40	100	286	100	1212	100

Type of Markst for Cattle Purchased by Sex. The sources of purchase for steers were auction, terminal markets, direct and delivered (Table 79). The heifers and some of the mixed cattle were purchased at auctions. Ninety percent of the mixed cattle were purchased direct. Of all cattle, 37 percent were purchased at terminal markets, 29 percsnt at auctions, 25 percent dirsct and 9 percent delivered.

Tabls 79. Type of market for cattle in 13 purchasss for wintering and grazing by sex in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Purch.	Type of Market: Auction		Terminal		Direct		Delivered		All cattle	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%
All steers:	10	283	32	443	50	40	4	120	14	886	100
All heifers:	1	40	100							40	100
All mixed cattle:	2	26	9			260	91			286	100
Total	13	349	29	443	37	300	25	120	9	1212	100

Number and Grade of Cattle Purchased by Sex. The most common grades were: good, choice and common. Twenty-one percent of the steers graded choice and 79 psrcent good; all of the hsifers graded common; all of the mixed cattle graded choice.

Average Weight of Cattle Purchased by Sex. The average weight for steers purchased was 491 pounds, 400 pounds for hsifers and 463 pounds for mixed cattle (Table 81).

Table 80. Number and percent of cattle in 13 purchases for wintering and grazing by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Grades						All grades	
	Choice		Good		Common			
	No.	%	No.	%	No.	%	No.	%
All steers:	183	21	703	79			886	100
All heifers:					40	100	40	100
All mixed cattle:	286	100					286	100
Total	469	39	703	58	40	3	1212	100

Table 81. Average weight of cattle in 13 purchases for wintering and grazing by grade and sex in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Cattle	Grades			All grades
		Choice	Good	Common	
	No.	Lbs.	Lbs.	Lbs.	Lbs.
All steers:	886	482	519		491
All heifers:	40			400	400
All mixed cattle:	286	463			463
Total	1212				

Number of Cattle Sold by Month. The sales of 1,063 steers, 374 heifers and 41 mixed cattle occurred from June through October (Table 82). The largest numbers of cattle were sold in August and September. The greatest numbers of steers were sold in July, August and September. Ninety percent of the heifers were sold in June. There were only 41 mixed cattle of which 21 were sold in June and 20 in October.

Table 82. Number and percent of wintered and grazed cattle in 20 sales by sex during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Sex: Steers		Heifers		Mixed cattle		All cattle	
	No.	%	No.	%	No.	%	No.	%
June	127	12	335	90	21	51	483	33
July	216	20	20	5			236	16
August	306	29					306	21
September	371	35	19	5			390	26
October	43	4			20	49	63	4
Total	1063	100	374	100	41	100	1478	100

Type of Market for Cattle Sold by Sex. They were sold at auctions, terminal markets, and delivered (Table 83). Most of the sales were at terminal markets and auctions, with the remaining sales being delivered. The steers were sold at all the above markets, whereas, heifers were sold at auctions and terminals, and mixed cattle were sold at terminal markets and delivered. For all cattle sold, 59 percent were sold at terminal markets, 36 percent at auctions and 5 percent were delivered.

Table 83. Type of market, for wintered and grazed cattle in 20 sales by sex in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Sales:	Type of Market: Auction		Terminal		Delivered		All cattle	
	No.	No.	%	No.	%	No.	%	No.	%
All steers:	13	441	41	562	53	60	6	1063	100
All heifers:	5	88	24	286	76			374	100
All mixed cattle	2			21	51	20	49	41	100
Total	20	529	36	869	59	80	5	1478	

Grade of Cattle Sold by Sex. The steers graded good, choice and fancy. Fifty-eight percent graded good, 38 percent choice and 4 percent fancy (Table 84). Ninety percent of the heifers graded choice and 10 percent graded common. All of the mixed cattle graded common.

Table 84. Number and percent of wintered and grazed cattle in 20 sales by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Grades								All grades	
	Fancy		Choice		Good		Common			
	No.	%	No.	%	No.	%	No.	%	No.	%
All steers:	43	4	405	38	615	58			1063	100
All heifers:			335	90			39	10	374	100
All mixed cattle:					41	100			41	100
Total	43	3	740	50	656	44	39	3	1478	100

Average Weight of Cattle Sold by Sex. The average weight of the steers was 887 pounds; heifers, 676 pounds; mixed cattle, 720 pounds.

Table 85. Average weight of wintered and grazed cattle in 20 sales by sex and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex	Cattle	Grades				All grades
		Fancy	Choice	Good	Common	
	No.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
All steers:	1063	900	859	884		887
All heifers:	374		704		662	676
All mixed cattle	41			720		720
Total	1478					

Minor Methods of Beef Production[1]

Number of Cattle and Month of Purchase. Three farmers reported a total of 234 cattle purchased during June, September and October which were used in the minor methods (Table 86). These methods of beef cattle production were winter-graze-winter, graze-winter-graze, and winter-graze-winter-graze. Because of the small number of cattle, they were not divided into sex or size groups.

Table 86. Number and percent of cattle in 3 purchases for minor methods during various months of the year in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Cattle		Percent of total
	Farmers	Head	
	No.	No.	%
June	1	5	2
September	1	20	9
October	3	209	89
Total	5	234	100

Type of Market. About one half of the cattle were purchased at auctions. Thirty-seven percent were purchased direct and 9 percent at terminal markets.

Table 87. Type of market for cattle in 3 purchases for minor methods in selected counties in type of farming areas 3, 4, 5 and 8, Kansas 1954-57.

Size	Purch.	Type of Market						All markets	
		Auction		Terminal		Delivered			
	No.	No.	%	No.	%	No.	%	No.	%
Cattle	3	127	54	20	9	87	37	234	100

[1] Minor methods: winter-graze-winter, graze-winter-graze, and winter-graze-winter-graze.

Grade of Cattle Purchased. One half of the cattle purchased graded fancy and the other half graded choice.

Table 88. Number and percent of cattle in 3 purchases for minor methods by grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size	Grade				All grades	
	Fancy		Choice			
	No.	%	No.	%	No.	%
Cattle	117	50	117	50	234	100

Average Weight of Cattle Purchased. The average weight of cattle purchased was 376 pounds; the choice were a little heavier than the fancy.

Table 89. Average weight of cattle in 3 purchases for minor methods by grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size	Cattle	Grades		Av. wt. all grades
		Fancy	Choice	
	No.	Lbs.	Lbs.	Lbs.
Cattle	234	350	378	376

Number of Cattle Sold by Month. A total of 229 head were sold in three sales during the months of June, July and December (Table 90). The largest numbers were sold in June and December.

Type of Market of Cattle Sold. They were all sold at terminal markets (Table 91).

Table 90. Number of cattle sold in 3 sales for minor methods by month in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Number of Sales	Number of Head	Percent of total
	No.	No.	%
June	1	91	40
July	1	25	11
December	1	113	49
Total	3	229	100

Table 91. Type of market of cattle in 3 sales for minor methods in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size	Sales	Sold	Type of Market: Terminal	
	No.	No.	No.	%
Cattle	3	229	229	100

Grade of Cattle Sold. All of the cattle sold graded choice even though one half of them were reported as grading fancy when they were purchased (Table 92).

Table 92. Grade of cattle in 3 sales for minor methods in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size	Choice	
	No.	%
Cattle	229	100

Average Weight of Cattle Sold. The average weight of cattle sold was 830 pounds.

Table 93. Average weight of cattle in 3 sales for minor methods in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size	Number of Head	Choice	Av. wt.
	No.	Lbs.	Lbs.
Cattle	220	830	830

Number of Days, Average Weight and Gain Per Head by Sex for the Wintering Phase of the Wintered, Wintered-Grazed and Minor Methods. A total of 2,841 cattle were wintered, of which 1,912 were steers, 230 heifers and 699 mixed cattle (Table 94). These cattle were from all size groups except there were no heifers from the large size group. Eighteen steers, two heifers and 8 mixed cattle died making a total of 2,813 cattle at the end of the phase. The average number of days for the phase was 181 days with the average length of 179 days for steers, 189 days for heifers and 176 days for the mixed cattle. The average beginning weight for all cattle was 466 pounds, the average ending weight was 632 pounds; and the average gain for all cattle was 165.0 pounds per head. The steers had an average beginning weight of 510 pounds and an average ending weight of 688 pounds making an average gain of 175.6 pounds. For the heifers, the average beginning weight was 425 pounds and the average ending weight was 589 pounds; thus the average gain was 164.1 pounds. The average beginning weight for the mixed cattle was 452 pounds and their average ending weight was 609 pounds. This made an average gain of 165.0 pounds per head for all mixed cattle. The average daily gain per

head for steers was .99 pounds; heifers, .87 pounds; and mixed cattle, .89 pounds.

Table 94. Number of days in phase, number of head, average weight and average gain during the wintering phase by sex and size groups for the wintered, wintered-grazed and minor methods of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex and size group	Av. no. days in phase	Number of Head: Beg. of phase	Died dur. ph.	End. of phase	Av. weight: Beg. of phase	End. of phase	Average gain/head: Phase	Daily
	No.	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:								
0-29	178	108	1	107	542	746	204.8	1.15
30-49	187	151	-	151	461	650	198.0	1.06
50-129	147	833	7	826	520	710	176.3	1.20
130 & over	202	820	10	810	516	646	128.1	.63
Total		1912	18	1894				
Average	179				510	688	176.8	.99
Heifers:								
0-29	177	14	-	14	500	730	230.0	1.30
30-49	163	86	-	86	400	538	138.4	.85
50-129	228	130	2	128	375	500	125.0	.55
Total		230	2	228				
Average	189				425	589	164.5	.87
Mixed:								
0-29	153	143	2	141	445	590	147.2	.96
30-49	182	38	1	37	547	650	103.0	.57
50-129	201	50	-	50	408	640	232.0	1.15
130 & over	169	468	5	463	408	555	141.5	.84
Total		699	8	691				
Average	176				452	609	155.9	.89
Total		2841	28	2813				
Average	181				466	632	165.8	.92

Feede Fed. Table 95 givee the feede fed per head and per hundred pounds of gain for all cattle in the wintering phase of the wintered, wintered-grazed and minor methods of beef cattle production. The heifere received considerably lees corn, a little lees alfalfa but more pasture and cottonseed meal than did the steere and mixed cattle. There was not much difference in the amount of corn fed to the steers and mixed cattle, and except for alfalfa the mixed cattle received somewhat smaller quantitiee of feed per head. About the eame eituation was true for the feede fed per hundred pounds of gain.

Number of Days, Average Weight, and Average Gain Per Head by Sex for the Grazing Phaee of Grazed, Wintered-Grazed and Minor Methods of Beef Cattle Production. A total of 3,524 head of cattle consieting of 2,036 eteers, 911 heifers and 427 mixed cattle were used in the grazing system (Table 96). More than half of the eteere, heifere and mixed cattle were from the large eize groupe. There were no heifers or mixed cattle in the medium eize group. Seven steere, four heifere and one mixed died. The average length of grazing phaee was 120 daye for eteers, 146 days for heifers, 70 days for mixed cattle and an average of 113 days for all cattle in the phase.

The average beginning weight for the eteers wae 675 pounds and the ending weight was 846 pounde; the average gain was 168.4 pounds for all steere. For the heifere, the average beginning weight was 496 pounds and the average ending weight wae 690 pounds; the average gain was 193.9 pounds. The average beginning weight for the mixed cattle wae 607 pounds with an

average ending weight of 714 pounds. Their average gain was 106.6 pounds per head. For all cattle the average beginning weight was 601 pounds, the average ending weight was 759 pounds, and the average gain per head was 157.7 pounds. The average daily gain for steers was 1.42 pounds, 1.33 pounds for heifers and 1.52 pounds for mixed cattle.

Table 95. Feed fed per head and per hundred pounds of gain by sex for the wintering phase of the wintered, wintered-grazed and minor method of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Sex		
		Steers	Heifers	Mixed
Per head:				
No. of farms	No.	21.0	4.0	12.0
No. of head	No.	1907.0	230.0	699.0
Av. no. head	No.	90.8	57.5	58.2
Corn	Bu.	2.5019	.8053	2.5084
Cottonseed meal	Cwt.	.3912	.8609	.2620
Commercial feed	Cwt.	.4012	.4826	.0758
Alfalfa	Tons	.3327	.1913	.5549
Prairie hay	Tons	.0961	.0652	.0464
Silage	Tons	1.0964	.7285	.6862
Salt & pre.min.	Cwt.	.0702	.0522	.0629
Native pasture	Acres	1.2611	1.3913	1.1330
Other pasture	Acres	.8967	1.4696	.9128
Bedding	Tons	.0052		.0429
Per cwt. of gain				
No. of farms	No.	21.0	4.0	12.0
No. of head	No.	1912.0	230.0	699.0
Av. no. head	No.	90.8	57.5	58.2
Corn	Bu.	1.5839	.5952	1.7247
Cottonseed meal	Cwt.	.2477	.6362	.1801
Commercial feed	Cwt.	.2540	.3567	.0521
Alfalfa	Tons	.2107	.1414	.3816
Prairie hay	Tons	.0608	.0482	.0319
Silage	Tons	.6941	.5384	.4719
Salt & pre.min.	Cwt.	.0445	.0386	.0433
Native pasture	Acres	.7985	1.0283	.7791
Other pasture	Acres	.5677	1.0861	.6275
Bedding	Tons	.0033		.0295

Table 96. Number of days in phase, number of head, average weight and average gains during the grazing phase by sex and size group for the grazed, wintered-grazed and the minor methods of handling beef cattle in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Sex & size	Av.no. days in phase	Number of head: Beg.of phase	Died dur.ph.	End.of phase	Average weight: Beg. of phase	End. of phase	Av. gain/head: Phase	Daily
	No.	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.
Steers:								
0-29	103	77	1	76	543	677	134.0	1.30
30-49	102	83	-	83	838	948	111.9	1.10
50-129	136	694	5	689	644	823	179.4	1.32
130 & over	139	1182	1	1182	675	935	250.0	1.83
Total		2036	7	2029				
Average	120				675	846	168.1	1.42
Heifers:								
0-29	183	25	-	25	450	690	240.0	1.31
30-49	103	86	1	85	538	679	141.7	1.38
130 & over	153	800	3	797	500	700	200.0	1.31
Total		911	4	907				
Average	146				496	690	193.9	1.33
Mixed cattle:								
0-29	98	60	-	60	600	727	125.8	1.28
30-49	61	37	-	37	650	773	123.0	2.02
130 & over	51	330	1	329	570	641	71.0	1.39
Total		427	1	426				
Average	70				607	714	106.6	1.52
Total		3524	12	3512				
Average	113				601	759	157.7	1.40

Feeds Fed. Table 97 gives the feeds fed per head and per hundred pounds of gain for all cattle in the grazing phase of the grazed, wintered-grazed, and minor methods of beef cattle production. The heifers were allowed about one acre more of pasture than the steers and about 3.5 acres more than the mixed cattle. However, the heifers received considerably less corn than did

the steers and mixed cattle. The hsifers and mixed cattle did not receive any silage or commercial feeds.

Table 97. Number of farms and cattle, feed fed per head and per hundred pounds of gain by sex for the grazing phase of the grazed, wintered-grazed, and minor methods in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Sex		
		Steers	Heifers	Mixed
Per head:				
No. of farms	No.	18.0	4.0	5.0
No. of head	No.	2036.0	911.0	427.0
Av. no. head	No.	113.1	227.8	85.4
Corn	Bu.	.8753	.1802	.7722
Cottonseed meal	Cwt.	.1198	.1690	1.1241
Commercial feed	Cwt.	.0368		
Silage	Tons	.0041		
Salt & pre.min.	Cwt.	.0349	.0472	.0257
Native pasture	Acres	3.9959	5.1537	1.5597
Other pasture	Acres	.1601		.0585
Per cwt. of gain:				
No. of farms	No.	18.0	4.0	5.0
No. of head	No.	2036.0	911.0	427.0
Av. no. head	No.	113.1	227.8	85.4
Corn	Bu.	.4053	.0925	.9297
Cottonseed meal	Cwt.	.0555	.0868	1.3536
Commercial feed	Cwt.	.0171		
Salt & pre.min.	Cwt.	.0162	.0242	.0310
Native pasture	Acres	1.8150	2.6459	1.8782
Other pasture	Acres	.0727		.0705

COWHERDS

Cowherds are the foundation of the beef cattle industry. In this study, a total of 126 farmers reported cowherds. Of this number, over one-half of the farmers reported herds of less than 30 cows (Table 98). However, most cattle were in the 30-109 size group.

Table 98. Number and percent of farmers reporting and number and percent of cows by size groups in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size of Herd	Farmers Reporting		Cows	
	No.	%	No.	%
10-19	28	22	392	8
20-29	39	31	926	18
30-109	49	39	2304	45
Over 109	10	8	1496	29
Total	126	100	5118	100

In the commercial herds of beef cattle, two systems of breeding are commonly practiced in regard to the season of the year. In one system, the bulls are allowed with the cows throughout the year so that calving is on a year around basis. The other system is that of having all of the breeding done within a few months so that all calves arrive within a short spread of time. It is desirable to have all calves come within a few weeks of each other whether it be spring or fall, thereby assuring more uniformity in size of offspring.[1] Thus, it is easier to care for and market such animals.

Selling Calves at Weaning Time

Size of Herd and Breed of Cows. Usually the system of selling calves off grass consists of selling them after weaning in the fall as stockers weighing from 375 to 450 pounds. In this survey, 31 farmers used this

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1 M. E. Ensminger, Animal Science, The Interstate Printer and Publishers, Danville, Illinois, Copyright 1955, p. 524.

method and reported a total of 2,157 cows (Table 99). Sixty-one percent of the cows were in herds of 110 and over, 30 percent were in the 30-109 size group, 6 percent were in the 20-29 size group and 3 percent were in the 10-19 size group.

Table 99. Number of farmers reporting, number, percent of cows by size of herd and breed for calves sold at weaning time in selected counties in type of farming areas 3, 4, 5, and 8, Kansas, 1954-57.

Size of herd	Breed of Cows: Hereford			Angus			Shorthorn			All Breeds		
	Frms. Rptg.	Cows		Frms. Rptg.	Cows		Frms. Rptg.	Cows		Frms. Rptg.	Cows	
	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%
10-19	4	55	3				1	14	22	5	69	3
20-29	2	53	3	1	25	6	2	51	78	5	129	6
30-109	10	465	28	2	168	38				12	633	30
Over 109	8	1076	66	1	250	56				9	1326	61
Total	24	1649	100	4	443	100	3	65	100	31	2157	100

Seventy-six percent of all the cows were Herefords, 21 percent were Angus, and 3 percent were Shorthorn. Most of the Hereford and Angus cows were in the medium and large size groups. All of the Shorthorn cows were in the two small size groups.

Months Bull with Cowherd. Twelve farmers, with 35 percent of the cows, kept the bull with the herd all year around (Table 100). Eight farmers, which represented 34 percent of the cows, reported May as the month the bull was turned in with the herd; the remaining farmers reported all other months except July through November. The most common months for taking the bull from the herd were July, September, October and November.

Table 100. Number of farmers reporting, number and percent of cows by month bull turned in with cows and month bull separated from cows in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Bull turned in with cows			Bull separated from cow		
	Frms. Rprtg.	Cows		Frms. Rprtg.	Cows	
	No.	No.	%	No.	No.	%
January	1	34	2			
February	1	114	5	1	130	6
March	2	54	2			
April	2	98	4			
May	8	725	34			
June	2	121	6			
July				3	169	8
August				1	39	2
September				5	524	24
October				4	121	6
November				3	263	12
December	2	240	11	1	140	6
All Year	12	746	35	12	746	35
No bulls*	1	25	1	1	25	1
Total	31	2157	100	31	2157	100

* One farmer reported he had no bull.

Ninety-nine percent of the bulls were purebred and their average age was 4.5 years. The average purchase price of bull was $335. Two farmers borrowed bulls. Percentage-wise the breeds of bulls were the same as the breeds of cows.

Dates Calves Born. Although calves were born throughout the year, more than half of the farmers reported the first calves born in January, February, and March; the median calves born in February, March, April and May; and the last calves born in April, May and June (Table 101).

Table 101. Number of farmers reporting, number and percent of calves born by months first calf born, last calf born and median calf born for calves sold at weaning time in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	First calf born			Last calf born			Median calf born		
	Frms. Rptg.	Cows		Frms. Rptg.	Cows		Frms. Rptg.	Cows	
	No.	No.	%	No.	No.	%	No.	No.	%
January	5	261	12				2	232	11
February	4	373	17				7	396	18
March	8	646	30	4	95	4	4	128	6
April				5	210	10	8	784	36
May				8	800	37	4	325	15
June				6	535	25			
July				3	257	12			
August									
September	4	217	10						
October	2	350	16						
November	2	160	8	1	46	2	2	162	8
December	3	66	3	1	130	6			
All Year	3	84	4	3	84	4	3	84	4
No information							1	46	2
Total	31	2157	100	31	2157	100	31	2157	100

Date Calves Sold. It appears that the number of calves sold had some influence on the time they were sold. Sales for the 10-19 size group were reported for July through December. For the 20-29 size group, sales were reported for September, October and December; whereas, the sales for the 30-109 size group were reported only in September and October. No sales information was obtained for the 110 and over size group.

Type of Market for Calves. About two-fifths of the sales were to terminal markets. Of the remaining sales, auctions received 31 percent, 26 percent were direct, and 4 percent were delivered (Table 103).

Table 102. Number and percent of weaned calves in 51 sales by month and size groups in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

All sex	Size Groups						All size groups	
	0-19		20-29		30-109			
	No.	%	No.	%	No.	%	No.	%
Month:								
July	22	6					22	2
August	42	12					42	4
September	95	27	24	14	63	14	182	19
October	115	33	102	58	384	86	601	62
November	64	18					64	7
December	15	4	49	28			64	6
Total	353	100	175	100	447	100	975	100

Table 103. Number of sales, number and percent of weaned calves in 51 sales by size group in type of market in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size Group	Sales	Type of Market								All markets
		Auction		Terminal		Direct		Delivered		
	No.	No.	%	No.	%	No.	%	No.	%	No.
0-19	36	204	58	93	26	41	12	15	4	353
20-29	7	102	58			48	28	25	14	175
30-109	8			284	64	163	36			447
Total	51	306	31	377	39	252	26	40	4	975

Grades of Calves Sold. Sixty-three percent of the calves sold graded choice, 27 percent good, 6 percent common and 4 percent fancy (Table 104). About half of the choice and all of the common grade calves were in the 30-109 size group. The 10-19 size group contained about two-thirds of those that graded good, and the 20-29 size group contained about two-thirds of those that graded fancy.

Table 104. Number and percent of weaned calves in 51 sales by size group and grade in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Group	Grade								All grades	
	Fancy		Choice		Good		Common			
	No.	%	No.	%	No.	%	No.	%	No.	%
0-19	11	3	169	48	173	49			353	100
20-29	23	13	127	73	25	14			175	100
30-109			318	71	66	15	63	14	447	100
Total	34	4	614	63	264	27	63	6	975	100

Weight of Calves Sold. There was only a slight variation in the avorage weights of calves between the different size groups. The average weight of the calves that graded good was 512 pounds; common, 460 pounds; choice, 437 pounds; and fancy, 400 pounds. For all calves sold, the average weight was 465 pounds per head (Table 105).

Table 105. Number and average weights of weaned calves in 51 eales by size group and grade in eelected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size Group	Calves	Grade				All gradss
		Fancy	Choice	Good	Common	
	No.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
0-19	353	450	463	536		498
20-29	175	350	403	515		415
30-109	447		*	388	460	424
Total	975	400	437	512	460	465

* Weights were not available.

Breed and Sex of Calves. A total of 975 calves were sold at weaning time. Of this total, 692 calves were Herefords, 170 were Angus, 31 were

Shorthorn and 82 were mixed breede. Farmers reported more steers than heifers sold; however, there were 234 calves reported as mixed (steers and heifers) (Table 106).

Table 106. Number of calves eold at weaning time in 51 salee by breed and sex in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Calves
	No.
Breed:	
Hereford	692
Angus	170
Shorthorn	31
Mixed	82
not obtained	
Total	975
Sex:	
Steers	430
Heifere	311
Steers and heifers	234
Bulls	
Total	975

Kinds of Transportation to Market and Disposition of Calves. The kind of traneportation wae not obtained for 304 calvee. Of those reported, almoet equal numbers were transported by owned and hired truck. There were 535 calves eold as feeders, 36 as stockers, and 16 as slaughter calves (Table 107).

Table 107. Number of calves sold at weaning time in 51 sales by mode of transportation and disposition in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Item	Calves
	No.
Mode of Transportation:	
Owned truck	318
Hired truck	334
Truck and rail	19
not obtained	304
Total	975
Disposition:	
Slaughter	16
Feeder	535
Stocker	36
not obtained	388
Total	975

Production of Calves for the Deferred Program

The production of deferred calves from cowherds may begin with spring calves which are weaned in the fall, and then wintered, grazed until August and then fed out. They are then about 18 to 20 months old, and sold as fat cattle which usually grade good to choice.

Size of Herd and Breed of Cows. In this survey, 34 farmers reported a total of 905 cows used to produce calves for this system (Table 108). The 10-19 size group and the 30-109 size group each had 11 farmers who reported 17 percent and 51 percent of the cows, respectively. Twelve farmers who had 32 percent of the cows were in the 20-29 size group.

Half of the farmers reported Hereford cows, followed in order of importance by Shorthorn, Angus and mixed breeds.

Table 108. Number of farmers reporting and number of cows by size of herd and breed for the production of deferred calves system in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size of herd	Breed of Cows: Hereford		Angus		Shorthorn		Mixed		All Breeds	
	Frms. Rprting	Cows	Frms. Rprting	Cows	Frms. Rprting	Cows	Frms. Rprting	Cows	Frms. Rprting	Cows
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
10-19	5	69			5	64	1	17	11	150
20-29	4	93	4	103	3	73	1	21	12	290
30-109	8	372	1	33	1	30	1	30	11	465
Total	17	534	5	136	9	167	3	68	34	905

Months Bull With Cowherd. Thirteen farmers, with 31 percent of the cows, reported the bull with the cowherd all year around (Table 109). Six farmers, with 18 percent of the cows, reported May; and five farmers, with 16 percent of the cows, reported April as the month the bull was turned with the herd. Other months reported were February, March, June, July and December. With the exception of February, March and April, farmers reported all months as the date the bull was separated from the cowherd; however, July through November were reported by most farmers as the months the bull was taken from the herd.

Ninety-two percent of the bulls were purebred. Their average age was 3.6 years and the average price paid for them was $296. Two bulls were raised and one was borrowed. Most of the bulls were Herefords.

Dates Calves Born. The farmers reported the first calves born in all months of the year except June, July, August and October (Table 110). Most

calves were born in the winter and early spring months. All months except July, August, September and November were reported as the dates median calves were born. Farmers reported the last calves born in all months of the year except September, October, December, January and February.

Table 109. Number of farmers reporting, number and percent of cows by the month bull turned in with cows and month bull was separated from cows for the production of deferred calves in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Months	Turned in with cows			Separated from cow		
	Frms. rprtg.	Cows		Frms. rprtg.	Cows	
	No.	No.	%	No.	No.	%
January				1	25	3
February	1	25	3			
March	2	79	9			
April	5	142	16			
May	6	163	18	1	25	3
June	3	94	10	1	14	2
July	2	43	5	3	112	12
August				3	78	9
September				3	103	11
October				4	117	13
November				4	127	14
December	2	75	8	1	20	2
All Year	13	284	31	13	284	31
Total	34	905	100	34	905	100

The feeds fed to the cows in this method of handling were included with the feeds fed to the no-creep cowherds.

The sales information and feeds fed for these deferred calves were included in the deferred feeding program.[1]

[1] Tables 3-20 in this study.

Table 110. Number of farmers reporting, number and percent of calves born by months first calf born, last calf born and median calf born for the production of deferred calves in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	First calf born			Last calf born			Median calf born		
	Frm. rprtg.	Cows		Frm. rprtg.	Cows		Frm. rprtg.	Cows	
	No.	No.	%	No.	No.	%	No.	No.	%
January	8	201	22				4	133	15
February	8	199	22				6	147	16
March	5	146	16	5	155	17	9	258	28
April	2	43	5	7	196	22	5	92	10
May	1	14	2	6	144	16	4	115	13
June				9	251	28	1	14	2
July				4	83	9			
August				1	30	3			
September	2	75	8						
October							1	25	3
November	2	58	7	1	25	3			
December	5	148	16				3	100	11
All Year	1	21	2	1	21	2	1	21	2
Total	34	905	100	34	905	100	34	905	100

Production of Calves for the Full Fed Program

Size of Herd and Breed of Cows. Twelve farmers reported 264 cows used in this method of handling calves from cowherds (Table 111). Thirty-four percent of the cows were in the 10-19 size group, 36 percent in the 20-29 size group and 30 percent in the 30-109 size group. Almost half of the cows were Herefords, with Shorthorns, mixed breeds[1] and Angus following in that order of importance.

[1] Cattle with mixed breeding.

Table 111. Number of farmers reporting, number and percent of cows by size of herd and breed for the production of full fed calves in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size of herd	Breed of Cows: Hereford		Angus		Shorthorn		Mixed		All breeds		
	Frms. rprtg.	Cows	Frms. rprtg.	Cows	Frms. rprtg.	Cows	Frms. rprtg.	Cows	Frms. rprtg.	Cows	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	%
10-19	1	15			4	59	1	16	6	90	34
20-29	2	51	2	45					4	96	36
30-109	1	38					1	40	2	78	30
Over 109											
Total	4	104	2	45	4	59	2	56	12	264	100

Months Bull with Cowherd. Four farmers with 31 percent of the cows reported that the bulls were with the cowherds all year around (Table 112). The bulls were turned with the herds in December and March through July. May, September, October and November were the months the bull was taken from the herd.

Less than half of the bulls were purebreds and their average age was 2.9 years. Four bulls were Herefords, three were Angus, three were Shorthorn and one was a mixed breed. Two bulls were raised and one was borrowed.

Dates Calves Born. Farmers reported the first calves born during all months of the year except October and May through August (Table 113). October, November and January through May were the months reported for the dates median calves born. All months were reported for the last calves born except for December and August through October.

Table 112. Number of farmers reporting, number and percent of cows by the month the bull turned with cows and the month the bull was separated from the cows for the production of calves to be full fed in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Turned in with cows			Separated from cows		
	Frms. rprtg.	Cows		Frms. rprtg.	Cows	
	No.	No.	%	No.	No.	%
March	1	15	6			
April	2	41	16			
May	2	60	23	1	16	6
June	1	25	9			
July	1	25	9			
September				2	35	13
October				3	81	31
November				2	50	19
December	1	16	6			
All Year	4	82	31	4	82	31
Total	12	264	100	12	264	100

Table 113. Number of farmers reporting, number and percent of calves born by months first calf born, last calf born and median calf born for the production of calves to be full fed in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	First calf born			Last calf born			Median calf born		
	Frms.rprtg.	Cows		Frms.rprtg.	Cows		Frms.rprtg.	Cows	
	No.	No.	%	No.	No.	%	No.	No.	%
January	2	41	16	1	16	6	3	44	17
February	1	40	15	1	16	6	3	79	30
March	2	45	17	3	51	19	1	20	7
April	1	25	9	2	51	19	2	65	25
May				1	55	21	1	25	9
June				2	35	13			
July				1	25	10			
September	2	31	12						
October							1	15	6
November	1	13	5	1	15	6	1	16	6
December	3	69	26						
Total	12	264	100	12	264	100	12	264	100

The feeds fed to the cows in this method of handling were included with the feeds fed to the no-creep cowherds (Table 114). The sales information and feeds fed for calves were included in the full fed program.[1]

Production of Calves for Other Programs

Size of Herd and Breed of Cows. Twenty-four farmers reported a total of 891 cows used in other methods of handling calves from cowherds. These included wintered, wintered-grazed, wintered-full fed, and grazed-full fed which did not fall into the other four specified methods. Fifty-one percent of these cows were in the medium size group, 23 percent in the medium small size group, 19 percent in the large size group and 7 percent in the small size group.

Over half of the cows were Herefords (Table 114). Other breeds in order of importance were Angus, Shorthorn and mixed breeds.

Table 114. Number of farmers reporting, number and percent of cows for other methods of handling calves by size of herd and breed in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size of herd	Breed of Cows: Hereford		Angus		Shorthorn		Mixed		All breeds		
	Frms. rprtg.	Cows	Frms. rprtg.	Cows	Frms. rprtg.	Cows	Frms. rprtg.	Cows	Frms. rprtg.	Cows	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	%
10-19	2	24	1	17	1	16			4	57	7
20-29	7	160	1	25	1	22			9	207	23
30-109	5	251	3	127			2	79	10	457	51
Over 109	1	170							1	170	19
Total	15	605	5	169	2	38	2	79	24	891	100

[1] See Tables 43-61 in this study.

Months Bull with Cowherd. Five farmers with 12 percent of the cows reported bulls with the herd all year around (Table 115). Beginning months for bulls with the herd were all months except July through November. The months in which the bulls were separated from the herds were March, April, and July through December.

Ninety-three percent of the bulls were purebreds. Their average age was 3.8 years and the average purchase price was $308. One bull was borrowed. Eighteen bulls were Herefords, nine were Angus, and one was Shorthorn.

Table 115. Number of farmers reporting, number and percent of cows for other methods by month bull turned in with cow and month bull separated from herd in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Bull turned in with cows			Bull separated from cows		
	Frms. Rprtg.	Cows		Frms. Rprtg.	Cows	
	No.	No.	%	No.	No.	%
January	1	40	4			
February	5	120	13			
March	1	170	19	2	49	5
April	3	72	8	1	68	8
May	5	238	27			
June	3	78	9			
July				2	50	6
August				2	183	20
September				3	124	14
October				7	274	31
November				1	16	2
December	1	68	8	1	22	2
All Year	5	105	12	5	105	12
Total	24	891	100	24	891	100

Dates Calves Born. Farmers reported first calves born during all months except May through August (Table 116). The median calves were born during all months except June through September. Months during which the farmers reported the last calves born were January, March through June, November and December.

Table 116. Number of farmers reporting, number and percent of cows for other methods of handling calves born by months first calf born, last calf born, median calf born in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	First calf born			Last calf born			Median calf born		
	Frms. rprtg.	Cows		Frms. rprtg.	Cows		Frms. rprtg.	Cows	
	No.	No.	%	No.	No.	%	No.	No.	%
January	5	109	12	1	68	8	1	170	19
February	5	236	27				4	144	16
March	3	74	8	5	252	28	7	198	22
April	1	28	3	4	129	14	3	102	12
May				6	186	21	1	28	3
June				5	180	20			
September	3	114	13						
October	1	40	5				1	68	8
November	3	75	8	1	25	3	2	46	5
December	3	215	24	2	51	6	5	135	15
All Year Total	24	891	100	24	891	100	24	891	100

Feeds fed to the cows in these methods of handling were included with the feeds fed to the no-creep cowherds.

Feeds for Cowherds. Table 117 gives the feed consumption per head for the cows. As would be expected most feeds were fed during the wintering phase. Feeds fed per head during this phase were about one-quarter bushel of corn, about 50 lbs. of cottonseed meal, almost a ton of alfalfa, almost one-fifth ton of prairie hay and slightly more than a ton of silage; some

native and other pasture were used during this phase.

Very little feed except pasture was used during the grazing phase. Farmers reported a little more than six acres of native pasture and almost one-half acre of other pasture per cow.

This table gives the total feed fed for both phases. The number of acres of pasture per head is large, but as pointed out in the procedure of this study, acres in pasture may be counted twice in some instances; this was probably what happened in the total acres of native pasture.

Table 117. Total of various feeds fed per head for cowherd (no creep) in selected counties in type of farming area 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Cowherd (no creep)		Total
		Winter	Grazed	
No. of farms	No.	101.0	101.0	101.0
No. of head	No.	4217.0	4217.0	4217.0
Av. no. head	No.	4241.8	4241.8	4241.8
Corn	Bu.	.1416	.0350	.1766
Cottonseed meal	Cwt.	.5056	.0764	.5820
Commercial feed	Cwt.	.5504	.0140	.5644
Alfalfa	Tons	.9973	.0242	1.0215
Prairie hay	Tons	.1713		.1713
Silage	Tons	1.1305	.0075	1.1380
Salt & pre. min.	Cwt.	.1029	.0971	.2000
Native pasture	Acres	4.6796	6.0149	10.6945
Other pasture	Acres	1.5746	.4695	2.0441
Bedding	Tons	.0121		.0121

Production of Calves by the Creep Fed System

The system of creep fed calves is the production of slaughter calves in the shortest time, with the least cost, and at a desirable weight.[1]

[1] Lot F. Taylor, "Creep Feeding", Agricultural Experiment Station Circular 227, January, 1957, p. 2.

The creep feeding period is defined as that period in which calves are fed concentrates while still nursing the cow. According to packers, the creep fed program most nearly meets the housewife's demand for finished beef from a light weight carcass.[2]

This system should begin preferably with late fall, winter or early spring calves. It is desirable that calves be old enough to eat grain before they go to grass because calves born in the summer eat very little. There is considerable variation as to the length of the creep feeding system. Much of this variation is due to the different ages at which the system may be put into operation.

The concentrates may be fed from a creep feeder, from which the system received its name, or they may be fed daily by hand. A creep is an enclosure for feeding purposes made accessibls to calves but through which the cows cannot pass.[3] The location of the creep should be where the cows are inclined to loiter. This is usually near the place of watering. The creep feeding system which averages 180 days ends when the calves are weaned. They may then be full fed in the dry lot phase.

Size of Herd and Breed of Cows. Twenty-five farmers reported 901 cows, of which 451 were Herefords, 320 Angue, 18 Shorthorn and 45 mixed breeds. Seventy-five percent of the Hereford cows were in the 30-109 size group and

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2 Ibid., p. 2.

3 M. E. Ensminger, Animal Science, Interstate Printers and Publishers, Danville, Illinois, 1955, p. 527.

25 percent were in the 20-29 size group (Table 118). Seven of the farmers reported 320 Angus cows, 88 percent of these being in the 30-109 size group with the remaining 12 percent in the 10-19 and 20-29 size groups. Three farmers reported 85 Shorthorn cows of which 59 percent were in the 30-109 size group, 29 percent in the 20-29 size group and 12 percent in the 10-19 size group. The remaining two farmers reported 45 cows of mixed breeds which were in the 20-29 size group.

Table 118. Number of farmers reporting and number of cows in creep fed system by size of herd and breed in selected counties in types of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Size of herd	Breed of Cows: Hereford		Angus		Shorthorn		Mixed		All breeds	
	Frms. rprtg.	Cows	Frms. rprtg.	Cows	Frms. rprtg.	Cows	Frms. rprtg.	Cows	Frms. rprtg.	Cows
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
10-19			1	16	1	10			2	26
20-29	5	112	1	22	1	25	2	45	9	204
30-109	8	339	5	282	1	50			14	671
Over 109										
Total	13	451	7	320	3	85	2	45	25	901

Months Bull with Cowherd. Five of the farmers with 18 percent of the cows reported the bull was with the herd throughout the year (Table 119). Eight farmers with 39 percent of the cows reported February as the month the bull was turned with the herd. Most of the bulls were separated from the cows in July, August and September.

All of the bulls were purebred and their average age was 3.9 years with an average purchase price of $347. Three of the farmers borrowed bulls. Fourteen of the bulls were Hereford, ten were Angus and four were Shorthorn.

Table 119. Number of farmers reporting, number and percent of cows in the creep fed system by months the bull first turned in with cow and month bull separated from cow in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	Bull turned in with cows			Bull separated from cows		
	Farmers rprtg.	Cows		Farmers rprtg.	Cows	
	No.	No.	%	No.	No.	%
January	3	83	9			
February	8	350	39			
March	2	110	12	2	47	5
May	2	85	9			
June	2	45	5	2	61	7
July				4	197	22
August				5	180	20
September				3	140	16
October				2	77	8
November	1	25	3	1	20	2
December	2	44	5	1	20	2
All Year	5	159	18	5	159	18
Total	25	901	100	25	901	100

Date Calves Born. Farmers reported that the first calves were born during all months except May through August (Table 120). Most of these calves were born in October, December, January and March. More than half of the median calves were born in the three month period of December, January and February. There were no median calves born during the months of July and August. Seventy-four percent of the last calves born were dropped during March, April and May.

Feeds Fed. Feeds were computed on a per cow basis and on a per hundred pounds of creep fed calves produced basis (Table 121). There were some differences between the amounts of feed fed to the cowherds creep group and the cowherds no-creep groups (Tables 117 & 121). The cowherd with

creep fed calves received more corn, cottonseed meal, prairie hay and considerably more silage than the cowherd with no creep fed calves. However, the cowherd creep received less commercial feed, alfalfa, salt and prepared minerals, pasture and bedding.

Table 120. Number of farmers reporting, number and percent of cows in the creep fed system by months first calf born, last calf born, and median calf born in selected counties in type of farming areas 3, 4, 5 and 8, Kansas, 1954-57.

Month	First calf born			Last calf born			Median calf born		
	Frms. rprtg.	Cows		Frms. rprtg.	Cows		Frms. rprtg.	Cows	
	No.	No.	%	No.	No.	%	No.	No.	%
January	3	131	15	1	20	2	4	130	15
February	1	20	2	1	38	4	4	195	22
March	3	110	12	6	212	24	2	52	6
April	1	10	1	6	310	34	2	90	10
May				4	142	16	1	20	2
June				1	50	6	1	10	1
July				2	50	6			
August				1	10	1			
September	2	47	5				1	22	2
October	7	266	30				1	25	3
November	2	99	11	2	47	5	3	94	10
December	5	196	22				5	241	27
All Year	1	22	2	1	22	2	1	22	2
Total	25	901	100	25	901	100	25	901	100

Most of the feeds were fed during the wintering phase. Only small amounts of prairie hay and commercial feeds were fed. About three-fourths bushel of corn, 67 pounds of cottonseed meal and 2.5 tons of silage were consumed per cow. The cows were allowed about 2.3 acres of pasture per head during the wintering phase.

Prairie hay was the only feed other than pasture and salt and prepared minerals fed during the grazing phase.

The creep fed calves received about 26 bushels of corn, 125 pounds of commercial feed and 97 pounds of cottonseed meal. They also received small quantities of other feeds.

It took approximately 3.8 bushels of corn, 18 pounds of commercial feed, 23 pounds of cottonseed meal and small quantities of other feeds for each hundred pounds of calves produced.

Table 121. Total of various feeds fed per cow and feed per hundred pounds of gain for calves in cowherd creep fed system in selected counties in type of farming area 3, 4, 5 and 8, Kansas, 1954-57.

Item	Unit	Cowherd (creep)			Calves	Total cows and calves
		Winter	Grazed	Total		
Per cow:						
No. of farms	No.	25.0	25.0	25.0		
No. of head	No.	901.0	901.0	901.0		
Av. no. head	No.	36.0	36.0	36.0		
Corn	Bu.	.7806		.7806	26.0327	26.8133
Cottonseed meal	Cwt.	.6732		.6732	.9736	1.6468
Commercial feed	Cwt.	.0300		.0300	1.2464	1.2764
Bran	Cwt.				.0255	.0255
Alfalfa	Tons	.6460		.6460	.1404	.7864
Prairie hay	Tons	.1726	.0179	.1905	.0532	.2437
Silage	Tons	2.4778		2.4778	.2564	2.7342
Salt & pre.min.	Cwt.	.0976	.0833	.1809	.0511	.2320
Native pasture	Acres	2.0333	5.8513	7.8846	.4994	8.3840
Other pasture	Acres	1.2941	.2686	1.5627	.2165	1.7792
Bedding	Tons	.0066		.0066	.0133	.0199
Per cwt. calves produced:						
No. of farms	No.	25.0	25.0	25.0		
No. of head	No.	901.0	901.0	901.0		
Av. no. head	No.	36.0	36.0	36.0		
Corn	Bu.	.1114		.1114	3.7184	3.8299
Cottonseed meal	Cwt.	.0961		.0961	.1390	.2352
Commercial feed	Cwt.	.0043		.0043	.1780	.1823
Bran	Cwt.				.0036	.0036
Alfalfa	Tons	.0923		.0923	.0197	.1120
Prairie hay	Tons	.0246	.0026	.0272	.0076	.0348
Silage	Tons	.3539		.3539	.0366	.3905
Salt & pre.min.	Cwt.	.0139	.0119	.0258	.0073	.0331
Bedding	Tons	.0009		.0009	.0019	.0028

SUMMARY

Thie study was concerned with obtaining information pertaining to actual farm practices and to acquire standards on physical input and output data especially of feed and production for the various methods of beef cattle production in eastern Kansas.

The data were obtained from 275 farmers in eelected counties of Kansas in type of farming areas 3, 4, 5 and 8. It was belisved that cattle production in these counties gave a representative sample of the various methods of beef cattle production in eastern Kansas. Lists of beef cattle producers were obtained in these countiss, and eample farmers were chosen by random sampling. Only farmere with nine or more head of cattle were interviewed.

In the tabulation of these data, they were grouped according to method of handling. Each method of handling was then sorted by phase of production, size, group, sex, grade, breed, month of purchase and of sale, and type of market.

The feeds fed and the average weights were tabulated; arithmatic averages were calculated for each method of handling by phase and eex. In determining the quantitiee of each feed fed, the total amount of sach of the different feeds fed to each group were divided by the total number of head in that group whether or not each farmer used all of the different feeds. Because of the large variety and, in some instances, small quantitiss of feeds reported, index numbers were calculated for each feed and the minor feeds were changsd to equivalents of the more prominant feeds. For example, all cereal grains were changed to corn equivalents. All equivalsnts,

except protein, were figured on the total digestible nutrients basis; protein was figured on the total digestible protein basis.

Most of the cattle for the deferred system were in the 50-129 size group and were purchased at terminal and auction markets in the fall and winter months. Fifty-nine percent of the steers, 45 percent of the heifers, and all of the mixed cattle graded choice; 35 percent of the steers and 51 percent of the heifers graded good. A few steers graded fancy and some steers and heifers graded common. The average weight for steers purchased was 618 pounds which was considerably more than the average weight for heifers and mixed cattle.

Steers were reported sold in all months of the year; however, most sales were in the fall and winter with the largest number sold in January. Most heifers were also sold in the fall and winter; the largest numbers were sold in October and November. Practically all of the mixed cattle were also sold in the fall and winter; however, sales were greatest during November, January, and February. The majority of steer and heifer sales were from the 50-129 size group, whereas, the mixed cattle sales were mainly from the 0-29 size group. Ninety-seven percent of the steers, 80 percent of the heifers and 99 percent of the mixed cattle were sold at terminal markets. Seventy-eight percent of the steers, 80 percent of the heifers, and 65 percent of the mixed cattle graded choice; 21 percent of the steers, 15 percent of the heifers, and 34 percent of the mixed cattle graded good; a few graded fancy. The average sale weight of deferred steers was 1,041 pounds which was heavier than either the heifers or mixed cattle.

The deferred system is usually divided into three phases: wintering, grazing and full feeding or drylot. The average length of the wintering phase varied by the sex of the animals in that mixed cattle had 182 days; heifers, 175 days; and steers, 160 days in this phase. The average daily gain per head for this phase was 1.03 pounds for steers; heifers, .89 pounds; and mixed cattle, .86 pounds. For all cattle the average daily gain during the wintering phase was .93 pounds.

The grazing phase averaged 128 days for all cattle; however, the mixed cattle had an average of 146 days compared to 122 days for heifers and 121 days for steers. The average daily gain for all cattle in this phase was 1.36 pounds; for steers and heifers, 1.39 pounds; and 1.32 pounds for mixed cattle. The mixed cattle had the greatest number of days in the dry lot phase. They had an average of 102 days compared to 99 days for steers, and 80 days for heifers. The average daily gain per head for all cattle was 2.06 pounds, 2.16 pounds for steers, 2.14 pounds for mixed cattle, and 1.88 pounds for heifers. For all three phases the average daily gain was 1.44 pounds for steers, 1.26 pounds for heifers and 1.32 pounds for mixed cattle.

Most purchases of the wintered to be full fed cattle were in the 50-129 size group. The steers were the heaviest with an average weight of 666 pounds; heifers, 506 pounds; and mixed cattle, 477 pounds. The largest numbers were purchased in the fall and winter with a few purchased in March and April. About one-half of these cattle were purchased at terminal markets, one-fourth at auctions and the rest were purchased direct and delivered. Of all cattle purchased, 55 percent graded choice, 30 percent

good and 15 percent common. There was not very much difference in average weights between the grades.

Most steers were sold in May, June and July; heifers in June, July, August and September; and mixed cattle in June and July. All of the steers and mixed cattle, and 64 percent of the heifers were sold at terminal markets. Sixty-eight percent of all cattle graded choice, 25 percent good and 7 percent prime.

The average weight of the steers sold was 1,138 pounds; heifers, 843 pounds; and mixed cattle, 870 pounds. The wintering phase averaged 136 days for all of the cattle; steers, 131 days; heifers, 152 days; and mixed cattle, 117 days. The average daily gain per head was 1.48 pounds for steers, 1.06 pounds for heifers and 1.36 pounds for mixed cattle. Feeds for the wintering phase of this program were figured on the per head and the per hundred pounds of gain basis. The heifers received the most corn, and the steers received more than did the mixed cattle.

The feeds reported were tabulated separately for the wintered and the full fed phases of the wintered to be full fed cattle. The feeds fed during the drylot phase was included with the full fed feeding phase of all full fed cattle.

The grazing phase in the grazed to be full fed program averaged 137 days for all cattle. Fifteen farmers reported using this method of handling beef cattle. Practically all the cattle were steers, and since there were relatively few cattle reported they were not sorted into the various size groups. Most of these cattle were purchased in March, April, May and June; however, a few were purchased in July and August. The main

sourcee for theee cattle were auctione, terminal markets, direct and delivered. Forty-five percent graded good, 44 percent choice and 11 percent common. The steers were the heaviest avereging 628 pounds; heifere, 505 pounds; and mixed cattle, 425 pounds.

The salee of these cattle were somewhat scettered throughout the yeary however, the mejority were sold in the winter months with the lergest number eold in January. Almost all of the cettle were sold et terminal markets. Sixty-three percent graded choice and 37 percent good. Again the steers were the heaviest with an average weight of 1,046 pounds, whereee, the heifers weighed 877 pounds end the mixed cattle everaged 919 pounds.

Feed consumption was figured on a per head and per hundred pounds of gain basis. The average daily gain per head was 1.6 pounds.

The feed for the full feeding phese of this program was included with the dry lot phase of the wintered to be full fed and the full fed method of handling.

All eize groups were represented in the full feeding phase; however, more than half tho eteers and heifere were in the 130 and over size group. All of the mixed cattle were in the 0-29 size group. Cattle wers purchesed in all months of the year; however, the lergeet numbers were purchased in the fall and winter. Sixty-eeven percent were purchased at terminal markete, 17 percent were delivered and the rest were purchased at euctione and direct. Of these cattle, 42 percent graded good, 35 percent common and 23 percent choice. The average weight of the steers was 761 pounds; heifers, 623 pounds; and mixed cattle, 538 pounds.

Practically all sales were to the terminal markets. Sales occurred during all months of the year; however, the largest numbers of sales occurred during December, January, February and June for the steers; June, October and December for the heifers; and March, April, May, June and July for the mixed cattle. In the sales of these cattle, 51 percent graded good, 46 percent choice and three percent prime. The average weight of the steers was 1,096 pounds; heifers, 864 pounds; and 842 pounds for mixed cattle. The feeds fed and average gain as figured for this full fed phase includes not only the full feeding method of handling cattle but also includes the cattle for the dry lot phase of the wintered to be full fed and grazed to be full fed. The dry lot phase was broken down into these four lengths of feeding periods: less than 110 days, 110-139 days, 140-199 days and 200 days and over. Most steers were in the shortest feeding period, most heifers in the 140-199 day feeding period and about half of the mixed cattle in the 110-139 day feeding period. For cattle in the shortest feeding period the average daily gain per head for steers was 2.68 pounds, 1.80 pounds for heifers and 2.19 pounds for mixed cattle. For the cattle in the 110-139 day feeding period the average daily gain per head was 2.14 pounds for steers, 2.05 pounds for heifers, and 2.06 pounds for mixed cattle. The cattle in the 140-199 day feeding period had an average daily gain of 1.98 pounds for steers, 1.80 pounds for heifers and 1.81 pounds for mixed cattle. For cattle fed the longest time the average daily gain per head was 1.45 pounds for steers, 1.66 pounds for heifers and 1.53 pounds for mixed cattle.

For cattle in all lengths of feeding periods, the avsrage daily gain

per head was 1.88 pounds for steers, 1.90 pounds for heifers and 1.86 pounds for mixed cattle.

In 11 purchases, farmers reported 809 cattle in the wintered method of beef production. Over half of the cattle were purchased in November and December with 71 percent purchased at auctions, 17 percent direct, 9 percent delivered and 3 percent at terminal markets. About three-fourths of these cattle graded choice, 14 percent good, 10 percent fancy and 3 percent common. The average weight of the steers was 499 pounds; heifers, 375 pounds; and mixed cattle, 394 pounds.

Eighty percent of these cattle were sold during April and May. Most of the sales were to terminal markets, with fewer sales at auctions and delivered. Seventy-two percent of the cattle sold graded choice, 18 percent good, 9 percent fancy and 1 percent common. The average weight of the steers sold was 646 pounds; heifers, 615 pounds; and mixed cattle, 581 pounds. The feeds fed during this phase were included with the feeds for the wintering phases of the other methods.

In six purchases, farmers reported 1,242 cattle in the grazed method of beef cattle production. Most of the purchases occurred during March with 64 percent of the cattle delivered and 36 percent purchased at auctions. The majority of these purchases graded good with a few grading common. The average weight of the steers was 626 pounds and 475 pounds for heifers. No mixed cattle were purchased.

The majority of the sales occurred during the fall of which 90 percent occurred in September with 66 percent of the sales delivered and 34 percent to terminal markets. Eighty-six percent of these cattle graded good, 11

percent choice and 3 percent common. The average weight was 901 pounds for steers and 695 pounds for heifers.

The feeds fed during this phase were also included with the grazing phase for the other methods.

The minor methods include winter-graze-winter, graze-winter-graze and winter-graze-winter-graze. These were grouped together because of the small number of cattle involved.

Eighty-nine percent of the cattle were purchased in October. Of these cattle, 54 percent were purchased at auctions, 37 percent were delivered and 9 percent purchased at terminal markets; one-half graded fancy and the other half graded choice. Their average weight was 376 pounds.

Forty-nine percent of these cattle were sold in December, 40 percent in June and the rest in July. They were all sold at terminal markets, graded choice, and had an average weight of 830 pounds.

The cowherds were divided into two major groups: (1) cowherds whose calves were not creep fed and (2) cowherds whose calves were creep fed.

One hundred-one farmers reported cowherds whose calves were not creep fed. For these types of cowherds, most of the calves were either sold at weaning time, deferred or full fed, although a few calves were handled in other ways such as wintered and wintered-grazed. The largest numbers of these cattle were in the 30-109 size group. Hereford was the most common breed reported. Thirty-four farmers reported having the bull with the herd all year around. The common practice with the remaining farmers was to turn the bull with the herd in the winter and spring and to take the bull

from the herd in the summer and fall. Most of the farmers reported the first calf born in the winter, the median calf born in the late winter and spring and the last calf born in the spring. Calves were reported born in all months of the year except August. The feeds fed to these cowherds were calculated on the per cow basis.

Twenty-five farmers reported the creep fed system of beef cattle production. In this method of handling cattle, calves are offered grain while they are still nursing the cow. Almost three-fourths of these cows were in the 30-109 size group and none were in the 110 and over size group. Hereford was the prominent breed followed in order of importance by Angus and Shorthorn.

Five of the farmers reported the bull with the herd all year around. The usual practice with the remaining farmers was to turn the bull with the herd in the winter and take the bull from the herd in the summer and fall.

All of the first calves were born in early fall, median calves were born in the fall and winter, and the last calves were born in the winter and spring.

There appeared to be some differences in the amounts of feed fed to the cows in the cowherd creep and the cowherd no-creep systems. Cows with the creep fed calves received somewhat more corn, cottonseed meal and prairie hay and considerably more silage than the cows with no-creep fed calves; however, they received less commercial feed, alfalfa and prepared minerals.

ACKNOWLEDGMENT

The assistance and encouragement given by Dale A. Knight and C. F. Bortfeld, Associate Professors, Department of Economics and Sociology, Kansas State College, in preparation of this thesis is gratefully acknowledged.

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APPENDIX

Table 122. Feed Equivalent Index.

Feed	TDN	Weight	Traneformation coefficient	Index
		Bu.		
Corn equivalent				
Corn	.806	56	45.136	1.00
Ground ear corn	.759	70	53.130	1.18
Oats	.715	32	22.880	.51
Grain sorghum	.799	56	44.744	.99
Barley	.787	48	37.776	.84
Wheat	.836	60	50.160	1.11
Rye	.801	56	44.856	.99
Cracked corn & molasses	.834	56	46.704	1.03
Molaeses	.566		56.600	1.25
Alfalfa equivalent		Tons x 10		
Alfalfa	.503	20,000	10060	1.00
Red clover hay	.519	20,000	10380	1.03
Lespedeza	.522	20,000	10440	1.04
Prairie hay equivalent				
Prairie hay	.492	—	9840	1.00
Brome hay	.489	—	9780	.99
Wheat hay	.465	—	9300	.95
Wheat & brome	.477	—	9540	.97
Bailed oats	.463	—	9260	.94
Bailed rye	.447	—	8940	.91
Cottonseed hulle	.437	—	8740	.89
Cob chop	.462	—	9240	.94
Straw (wheat)	.357	—	7140	.73
Corn silage equivalent				
Silage corn	.187	—	3740	1.00
Silage sorhum	.156	—	3120	.83
Silage grass	.154	—	3080	.82
Silage oats	.154	—	3080	.82
Silage alfalfa & oats	.328	—	6560	1.75
Corn fodder	.546	—	10920	2.92
Sorghum butte	.477	—	9540	2.55
Cottonseed meal equivalent		Cwt.		
Cottonseed meal	.339	100	33.9	1.00
Cottonseed cake	.339	100	33.9	1.00
Soybean oil meal	.376	100	37.6	1.11
Linseed oil meal	.307	100	30.7	.91

SYSTEMS OF BEEF CATTLE PRODUCTION IN EASTERN KANSAS 1954-57

by

GAYLORD JOHN CHIZEK

B. S., Kansas State College
of Agriculture and Applied Science, 1957

AN ABSTRACT OF A THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Economics and Sociology

KANSAS STATE COLLEGE
OF AGRICULTURE AND APPLIED SCIENCE

1958

The objectives of this study were to obtain information pertaining to actual farm practices and to acquire standards on physical input and output data especially of feed and production for the various methods of beef production in eastern Kansas.

The data were obtained from 275 farmers in selected counties of Kansas in type of farming areas 3, 4, 5 and 8. Farmers within different methods of handling beef cattle and size groups were sampled randomly and were believed to be a representative sample of these groups. Only farmers with nine or more head of beef cattle were interviewed.

The data were grouped according to method of handling, size of enterprise and phase of production. The above were then subdivided, in detail, by grade, breed, month of purchase and of sale. Feeds fed and average weights were tabulated for each method of handling by sex and phase. The quantities of feed fed were calculated on the per head and the per hundred pounds of gain basis. Because of the large variety and, in some instances, small quantities of feeds reported, index numbers were calculated for each feed, and the minor feeds were changed to equivalents of the more prominent feeds. For example, all cereal grains were changed to corn equivalents. All equivalents, except protein, were figured on the total digestible nutrients basis; protein was figured on the total digestible protein basis.

Most of the deferred cattle were purchased at terminal markets and auctions in the late fall and early winter. Practically all cattle graded choice and good. The average weight was 618 pounds for steers, 408 pounds

for heifers and 337 pounds for mixed cattle.

Sales were scattered throughout the year; however, the majority of cattle were sold during the late fall and early winter at terminal markets. Choice was the predominate grade, although there were a considerable number of cattle that graded good. The average weight of the steers was 1,041 pounds, of heifers 879 pounds and of mixed cattle 1,006 pounds.

The average length of the wintering phase was 173 days, 130 days for the grazing phase and 94 days for the dry lot phase; the average daily gain was 2.06 pounds for the dry lot phase, 1.36 pounds for the grazing phase and .93 pounds for the wintering phase.

All size groups were represented in the dry lot phase of the full feeding system; however, more than half of the steers and of the heifers were in the 130 and over size group. All of the mixed cattle were in the 0-29 size group. Cattle were purchased in all months of the year; however, the largest numbers were purchased in the fall and winter. Sixty-seven percent were purchased at terminal markets, 17 percent were delivered and the rest were purchased at auctions and direct. Of these cattle, 42 percent graded good, 35 percent common and 23 percent choice. The average weight of the steers was 761 pounds; heifers, 623 pounds; and mixed cattle, 538 pounds.

Practically all sales were to the terminal markets. Sales occurred during all months of the year; however, the largest number of sales occurred during December, January, February and June for the steers; June, October and December for the heifers; and March, April, May, June and July

for the mixed cattle. In the sales of these cattle, 51 percent graded good, 46 percent choice and 3 percent prime. The average weight of the steers was 1,096 pounds; heifers, 864 pounds; and 842 pounds for mixed cattle. The feeds fed and the average gains as figured for the dry lot phase not only includes the full fed method of handling cattle but also includes the cattle for the dry lot phase of the wintered to be full fed and the grazed to be full fed method of handling. The dry lot phase was broken down into these four lengths of feeding periods; lese than 110 days, 110-139 days, 140-199 days and 200 days and over. Most steers were in the shortest feeding period, most heifers in the 140-199 day feeding period and about half of the mixed cattle in the 110-139 day feeding period. For cattle in all lengths of feeding periode the average daily gain per head wae 1.88 pounds for steers, 1.90 pounds for heifers and 1.86 pounds for mixed cattle.

There were not very many cases of the wintered, grazed, wintered-grazed, and minor methods reported. However, as in the previous methods, the purchase and sales information for each of the above methods were tabulated separately. The feed and average gain information for the grazing phase of these methods were grouped together and tabulated; the eame procedure was followed for the wintering phase.

Cowherds were divided into two major groups: (1) cowherde whose calves were creep fed, and (2) cowherds whoss calves were non-cresp fed. Although calves were born throughout the year, most of them were born in the winter and spring. The creep fed calves were dropped a little earlier in the winter than were the non-creep fed calves. The feeds fed each cowherd were tabulated for each phase on the per cow basis.