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Marketing **SOUTH DAKOTA** *Feeder Cattle*



BULLETIN 409 ♦ MAY 1951

AGRICULTURAL ECONOMICS DEPARTMENT

AGRICULTURAL EXPERIMENT STATION

SOUTH DAKOTA STATE COLLEGE

BROOKINGS

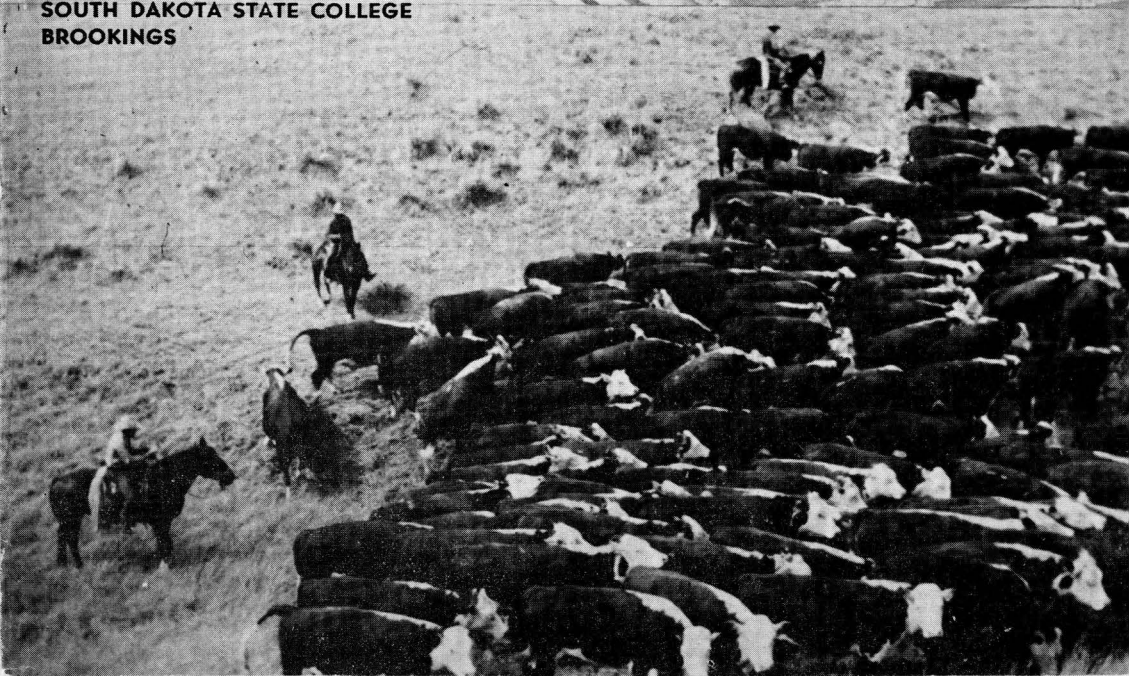


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This publication on marketing of feeder cattle represents part of a study conducted by the North Central Livestock Marketing Committee in cooperation with the Bureau of Agricultural Economics, United States Department of Agriculture. The South Dakota project was under the general direction of David G. Paterson. Others who cooperated in the study include Charles C. Micheel and Max Myers of the Department of Agricultural Economics, T. W. Dowe and Richard O. Smith of the Department of Animal Husbandry, South Dakota State College.

Previous studies in this field include United States Department of Agriculture Report No. 113, *Meat Situation in the United States*, Part V, "Methods and Cost of Marketing Livestock and Meats," Louis D. Hall, F. M. Simpson and S. W. Doty, Washington, Government Printing Office, 1916 and W. P. Cotton, *Livestock Marketing Practices in South Dakota*, South Dakota Agricultural Experiment Station, Bulletin 362, June 1942.

MARKETING

SOUTH DAKOTA FEEDER CATTLE

By OTTAR NERVIK¹

South Dakota is one of the more important cattle producing states, ranking ninth in the nation in 1949.² In 1949 the cash income from sales of cattle was 180 million dollars,³ more than 27 percent of the total cash farm income in the state. The number of cattle on farms has been increasing since 1937, although the number of dairy cattle has been sharply reduced since 1944.

Most parts of the state are well adapted to livestock production. This is especially true of the range areas in the western part of the state where extensive pastures are available. Since this area does not produce enough feed grain to finish most of its cattle for slaughter, the major share is sold to Corn Belt farmers for further fattening. In the eastern part of the state where an ample supply of feed grain is available, a considerable number of cattle are fed for slaughter.

The purpose of this study was to obtain information about the channels of distribution for cattle from range to feedlots. Information of this nature is basic to any further work in improving marketing methods for feeder cattle.

A special study was designed to determine the best time to market feeder cattle, taking into consideration both production and price factors. Lack of data concerning gains of cattle during the season prevented the completion of this part of study. A discussion of this problem is included in the second part of this bulletin to show certain important areas of research where further work is needed.

The study was conducted by personal interviews with a representative sample of farmers and ranchers in the state. In selecting the sample, special emphasis was placed on getting information about marketing methods. The study was therefore designed to obtain a representative sample of producers of feeder cattle rather than of all farmers. For this reason the data cannot be used to derive state figures for the total number of feeder cattle sold or bought.

Types of Market Used

The most important channels of sale for feeder livestock are:

Terminal Public Markets

Livestock Auctions, also called Sales Barns or Livestock Auction Agencies

Dealers

Order Buyers

Direct Sale

Terminal Public Markets. A terminal public livestock market is a market open to the public, where the stockyard owner provides facilities for trading and furnishes services, but does not buy or sell for his own use or as an agent for others. All terminal public markets are federally regulated and supervised according to the provisions of the Packers and Stockyards Act of 1921.

The only terminal public market in South Dakota is located in Sioux Falls. Other markets readily available for South Dakota producers are at Sioux City, Omaha, and South St. Paul. Some of the public markets handle mostly slaughter livestock while others handle nearly equal amounts of slaughter and feeder animals. The most important

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²Agricultural Statistics, 1950, Table 434, p. 358-359

³Information received from the South Dakota Crop and Livestock Reporting Service.

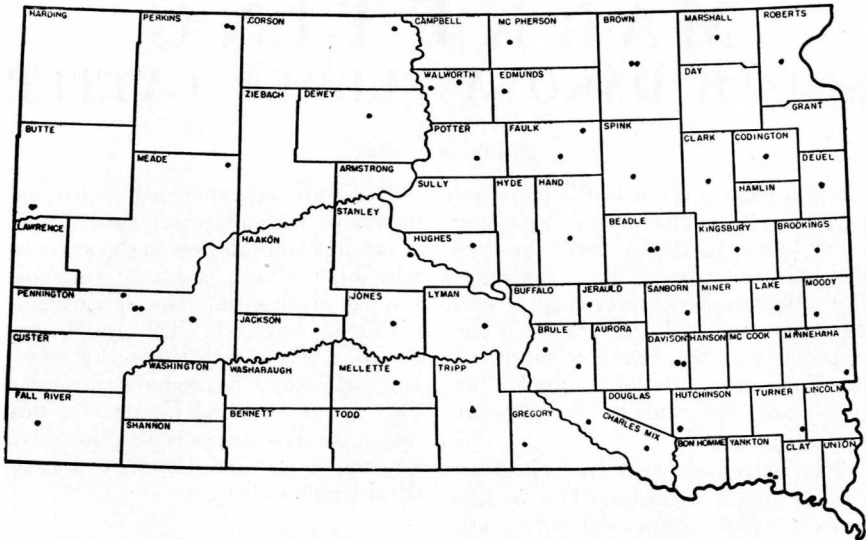


Fig. 1. Location of livestock auctions in South Dakota

feeder cattle markets in the nation are Kansas City, Omaha, Sioux City, and Denver (Table 1).

Livestock Auctions. A livestock auction provides facilities for public sale of livestock. The facilities are owned by private individuals or corporations who also may operate as a commission firm

on the market. The animals are sold by bidding, but the owner of the livestock may at his own discretion reject the offers made.

These markets are often favored by farmers because they make it convenient for them to follow their animals to the sale. By attending auction sales the farmer can observe for himself the supply and demand conditions. One disadvantage of the auction is that there may be times when there are not enough buyers and sellers present to give a true picture of the demand and supply situation. For this reason larger producers, who are able to assemble and ship in carload lots, often prefer terminal public markets or direct sale as outlets.

The number of livestock auctions has been increasing rapidly in recent years. In 1949, 54 livestock auction agencies were operating in the state. Some of these are relatively large and attract a number of buyers and sellers from other states. Figure 1 and Table 2 give the location and number of livestock handled by the various auctions in 1949. It should

Table 1. Feeder Cattle—Numbers Inspected at Public Stockyards for Shipment, 1949*

City	Total
Kansas City	567,366
Sioux City	513,859
Omaha	448,466
Denver	345,883
San Antonio	236,091
Oklahoma City	220,619
S. St. Paul	184,676
St. Louis	154,625
Wichita	143,909
Ogden	102,843
Fort Worth	95,334
Chicago	91,503
Sioux Falls	89,917

*U.S.D.A., P.M.A. Livestock Branch, Livestock Market News Statistics and Related Data 1949, Statistical Bulletin No. 91, Table 14, p. 17, Washington, D. C., August 1950.

Table 2. Livestock Auction Agency Report* July 1, 1948 — June 30, 1949

Name	City	Cattle
Aberdeen Livestock Sales Co.	Aberdeen	17,112
Anderson Livestock Sale Yards	Yankton	28,695
Artesian Livestock Sales Co.	Artesian	4,835
Belle Fourche Livestock Exchange	Belle Fourche	37,256
Belvidere Sales Ring	Belvidere	4,315
Blunt Livestock Auction	Blunt	4,429
Bowdle Livestock Sales Co.	Bowdle	6,258
Britton Sales Pavilion	Britton	4,221
Centerville Livestock Sales Co.	Centerville	7,147
Chamberlain Livestock Sales	Chamberlain	14,428
Clark Livestock Sales	Clark	7,295
Clear Lake Sales Co.	Clear Lake	1,922
Colman Livestock Sales	Colman	288
Cresbard Sales Co.	Cresbard	2,945
Edgemont Sales Pavilion	Edgemont	8,192
Eureka Livestock Sales Co.	Eureka	3,440
Faulkton Livestock Sales Co.	Faulkton	1,291
Fort Pierre Livestock Comm. Co.	Fort Pierre	18,429
Gettysburg Livestock Sales Co.	Gettysburg	2,877
Gregory Livestock Sales Co.	Gregory	6,705
Grossman Sales Co.	Brookings	14,239
Hub City Livestock Sales Pavilion	Aberdeen	14,700
Huron Livestock Sales Pavilion	Huron	8,445
Kane Livestock Sales Co.	Lemmon	4,283
Kimball Livestock Exchange	Kimball	25,393
Lemmon Livestock Sales Co.	Lemmon	12,621
McLaughlin Sales Co.	McLaughlin	3,519
Mac's Livestock Sales Co.	Mitchell	9,201
Madison Livestock Auction Co.	Madison	3,534
Miller Livestock Auction Co.	Miller	60,526
Mitchell Livestock Sales Co.	Mitchell	12,586
Mobridge Commission Co.	Mobridge	19,784
Moore's Sale Barn	DeSmet	1,866
Murdo Livestock Auction Co.	Murdo	1,378
Platte Livestock Auction Co.	Platte	5,712
Presho Livestock Auction Co.	Presho	8,912
Rapid City Livestock Sales Co.	Rapid City	17,136
Redfield Livestock Sales Co.	Redfield	7,103
Selby Livestock Sales Co.	Selby	3,566
Sioux Falls Livestock Auction	Sioux Falls	9,249
Sisseton Livestock Sales Co.	Sisseton	7,110
South Dakota Livestock Sales	Watertown	46,996
Stockman's Auction Co.	Huron	13,779
Stockman's Commission Co.	Rapid City	45,736
Sturgis Livestock Exchange	Sturgis	42,614
Timber Lake Sales Co.	Timber Lake	3,952
Tri-County Commission Co.	Faith	9,299
Tripp Livestock Sales Co.	Tripp	978
Wagner Livestock Sales Co.	Wagner	3,571
Wall Livestock Exchange	Wall	6,879
Wessington Springs Livestock Auction	Wessington Springs	3,256
White River Sales Co.	White River	2,745
Winner Livestock Auction Co.	Winner	27,197
Yankton Livestock Sales Co.	Yankton	28,077
Total		668,025

*Source South Dakota Livestock Sanitary Board.

be noted that the data for terminal public markets are for feeder cattle only, whereas the data for auctions include all classes of cattle.

Dealers. Livestock dealers are independent operators who buy and sell on their own account for profit. Dealers who handle feeder livestock buy from terminal public markets, auctions or direct from farmers, and then resell.

Order Buyers. An order buyer acts as an agent for livestock feeders and buys on their account. Many of the order buyers are residents of the producing areas, and their knowledge of the conditions in these regions enables them to assist feeders in finding suitable types of livestock.

Direct Sale. A large number of ranchers sell their feeders directly to farmers in the Corn Belt Area. Many of them have retained such contacts for a number of years. Where these contacts are on a regular basis no inspection may be necessary, because the rancher knows what type of cattle the feeder requires. The Corn Belt feeder on his part is familiar with the production methods used by the rancher. If there has been no previous contact between buyer and seller, inspection is usually necessary before the sale is concluded. Sometimes an order

buyer may assist the buyer in making the necessary arrangements with the seller. Direct sales reduce certain marketing costs, such as commissions and yardage fees; but requires that the parties to this transaction know cattle and cattle values. This method is used mostly by large ranchers who are able to ship several carloads.

Relative Importance of These Markets. According to the sample, the most important channel in South Dakota for feeder cattle in 1947 was the livestock auction, which accounted for 41 percent of the feeder cattle sold. Next in importance was the terminal public market with nearly 35 percent; dealers, 10 percent; direct sales, 9 percent; and order buyers, 4 percent, in that order (Table 3).

Marketing practices varied among areas within the state. Thus in Area 1, which is primarily a range region, 46 percent of the cattle were marketed through auctions and 24 percent by direct sale. In Area 7, which is primarily a feeding area and which is closer to the terminal public markets, nearly 88 percent were sold through this channel. More than 50 percent were marketed through terminal public markets in Areas 4 and 6. Here again, proximity to the markets was the major factor in the farmers' selection of an outlet.

Table 3. Percent of Feeders Sold Through Various Market Agencies

Area*	Types of Markets					
	Terminal Public Market	Auction	Dealers	Order Buyers	Direct	Other
1.....	13.3	46.3	7.5	6.6	24.4	1.9
2.....	25.2	30.3	19.1	15.2	9.0	1.2
3.....	31.0	53.0	13.0	2.0	1.0	—
4.....	57.5	16.2	22.1	—	4.2	—
5.....	39.4	43.8	—	—	16.8	—
6.....	53.2	25.3	11.0	—	10.5	—
7.....	87.9	6.0	1.8	—	4.3	—
State Total.....	34.8	41.3	10.1	4.3	8.7	0.8

* For description of areas, see Fig. 2.

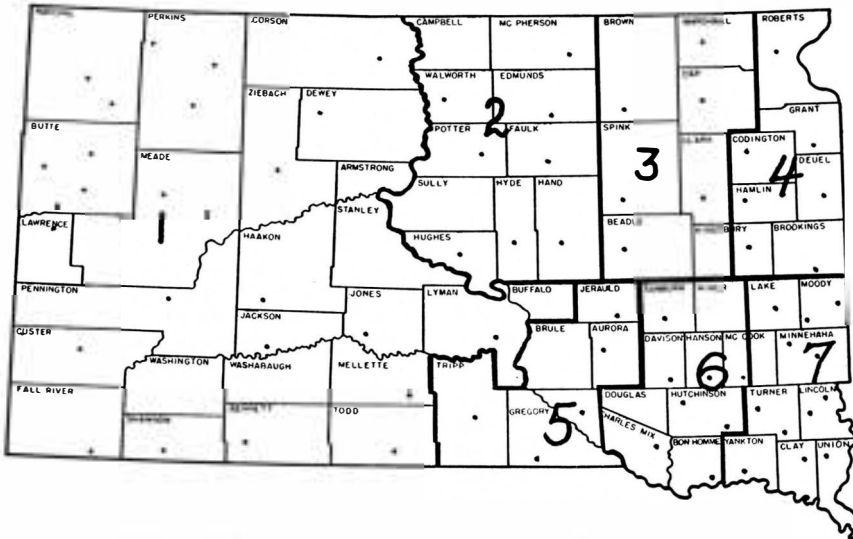


Fig. 2. Agricultural areas in South Dakota. Dots signify point of interview

Factors Influencing Marketing Practices

Size of Consignment. Forty-three percent of the feeder cattle were sold in lots of 20 head or more, and 11 percent in lots of 5 or less. Lots of less than 20 head have to be sent to a nearby market in order to insure an economical freight rate, unless several farmers combine to send their feeders in one shipment (Table 4).

Table 4. Size of Lots Sold by Feeder Cattle Producers

Number of Head	Percentage of All Cattle Sold
1 — 5	11.2
6 — 10	17.3
11 — 20	28.2
21 — 50	26.1
51 and over	17.2

Sales by Age and Weight. Approximately the same proportion (one-third) of the feeders were sold as calves, yearlings, or at two years or older. However,

a considerable portion of the animals classified by farmers as calves weighed more than 400 pounds. The weight group, 400 to 799 pounds, accounted for nearly 60 percent of the feeders sold. Less than 10 percent were sold at weight exceeding 1000 pounds (Table 5).

Table 5. Percentage of Feeders Sold at Various Weights

Weight in Pounds	Percent
Less than 400	7.8
400 to 599	27.1
600 to 799	31.6
800 to 999	17.3
1000 to 1199	8.8
1200 and over	0.3
No weight given	7.1

Sale by Weight and by Head. Most feeders are now sold on the basis of weight, but a number are still sold on per head basis. About 80 percent of the farmers interviewed stated that they sold on weight, and about 20 percent stated that they sold at a price determined by head.

Table 6. Method of Transportation from Farm to Market

Type of Market	Own Truck	Percent of Cattle Sent by:			
		Hired Truck	Buyers' Truck	On Foot	Railroad
Terminal public markets	0.7	84.4			14.9
Auction	22.3	75.2		2.5	
Dealers	1.2	35.7	58.4		4.7
Order buyers			71.8	9.2	19.0
Direct	0.5	65.0	11.4	23.1	
Total	9.0	66.7	12.4	5.1	6.8

Steers were sold mostly by weight, whereas more than 40 percent of the heifers were sold by head. The reason given by farmers who sold heifers was that heifers were discriminated against when they were sold by weight. An additional factor is that heifers often are sold for breeding purposes where weight is less important in determining price.

Also a relatively large proportion (almost 29 percent) of the calves were sold on a per head basis. In the opinion of the producers, this was due to the fact that calves are immature animals and the price per hundredweight does not accurately reflect their actual value.

Transportation Problems

From Producer to Market. Trucks carried the greatest proportion of feeder cattle from farms to market; 88 percent were transported in this manner, with about 7 percent being shipped by rail and 5 percent being driven in on foot. Only in Area 1, which is principally a range area, did the railroads carry a significant portion (16 percent) of the feeders to market. In all areas the hired truck carried the largest share of the truck shipments.

Size of the lot shipped has some influence on the method of transportation used. This was especially true for railroads which had less than 2 percent of the cattle shipped in lots of 20 head or less. When shipments were in larger lots, the proportion handled by the railroads increased to 7 percent for lots of

21 to 50 head, and to 25 percent for lots of 51 and over (Table 6).

Caution should be exercised in analysis of these data. It should be remembered that only transportation from ranch or farm to first market is included. Feeder cattle sold through auction markets, dealers, and order buyers often are resold and shipped long distances before they arrive in feed lots. However, it is noticeable that hired trucks handled 85 percent of the feeder cattle shipped from farms and ranches to terminal public markets, while the railroads carried only 15 percent.

From Market to Feedlot. In shipments from markets to feedlots, trucks were the most important means of transportation with 75 percent of all cattle carried in this manner. Nineteen percent were shipped by rail and six percent driven from market on foot (Table 7).

Table 7. Method of Transportation Used From Market to Feedlot

Method	Percent of Cattle
Truck	75
Rail	19
On foot	6

Methods of Shipment. A large share of the feeder cattle is transported to market by truck. However, for long-distance shipment, rail shipments are still the most common method. In many instances no direct competition exists between truck and rail shipment. Trucks are generally used in shipments to near-

Table 8. Railroad Rates* to Selected Terminal Markets† Per Hundred Pounds

From	Sioux City, Iowa		Omaha, Nebr.		Chicago, Ill.		S. St. Paul, Minn.	
	Cents	Mileage	Cents	Mileage	Cents	Mileage	Cents	Mileage
Belvidere	45	311.5	51	411.6	75	757.4	57	490.2
Ft. Pierre	44	299.4	50	399.5	74	745.0	51	418.1
Belle Fourche	56	477.2	62	577.3	84	923.1	66	637.6
Kadoka	46	324.5	52	424.6	75	770.4	58	503.2
Faith	56	478.2	62	596.3	83	897.2	58	516.9
Philip	49	374.9	56	475.0	80	820.5	57	493.6
Winner	42	249.2	44	289.3	74	748.8	58	521.7
Lemmon	56	462.3	61	562.4	82	863.3	57	483.0
Miller	37	218.0	45	318.1	70	663.6	46	336.7
Rapid City	52	423.0	58	523.1	82	868.9	62	583.4
Huron	35	186.9	44	287.0	69	636.7	44	296.6
Gettysburg	45	302.6	51	402.7	74	724.2	49	373.3
Aberdeen	43	265.3	49	365.4	70	663.8	44	286.0
Woonsocket	34	164.9	43	265.0	66	614.5	45	312.0
Faulkton	42	259.8	48	359.9	72	681.4	46	330.5

*Data obtained from South Dakota Public Utilities Commission, Pierre, South Dakota.

†Includes 2 percent increase granted by the Interstate Commerce Commission. The railroads have amended their petition to the Interstate Commerce Commission and are now asking for an additional increase of 13 percent.

by markets where no rail service is available. The relatively large share of the cattle shipped by truck should, however, pose the problem to the railroads whether they can provide service that would be more satisfactory to livestock producers.

Direct comparison of the cost of the two methods of transportation would provide useful information to producers. Such comparisons could be made by dividing herds of uniform breeding and age for shipment by the two methods. The cost of truck shipment is usually higher than rail shipments. If shrinkage is included in shipping cost, the shorter time in transit by truck transportation may offset this initial cost advantage. In Table 8 the rates for rail transportation from selected points to terminal public markets are given. For the sake of comparison, rates of representative trucking firms for transportation within the state of South Dakota are given in Table 9.

Railroad and truck rates are, however, only one part of the shipping expenses. In shipments which move a long distance, shrinkage of cattle is the important factor in cost of transportation.

Few producers have any information about the extent of such losses, because they can only be estimated after the cattle have arrived in the buyer's feedlot. To estimate this loss, it is necessary to

Table 9. Railroad and Truck Rates to Sioux Falls Per Hundred Pounds On Feeder Cattle*

From	Mileage	Railroad† Cents	Truck Rates‡ Cents
Belvidere	246.8	41.0	59
Ft. Pierre	228.8	38.5	57
Belle Fourche	412.5	50.0	86
Kadoka	259.8	41.0	62
Faith	412.7	50.0	75
Philip	304.3	44.0	64
Winner	339.0	45.0	54
Lemmon	378.8	48.5	85
Miller	147.4	32.5	43
Rapid City	358.3	47.5	77
Huron	107.3	27.0	38
Gettysburg	223.0	38.5	55
Aberdeen	181.8	34.0	50
Woonsocket	103.6	27.0	36
Faulkton	180.2	34.0	49

*Data obtained from the South Dakota Public Utilities Commission, Pierre, South Dakota.

†A 2 percent increase on interstate traffic has been approved by the Interstate Commerce Commission. This increase has not been approved as yet by the South Dakota Public Utilities Commission on intrastate traffic. A hearing was held in Pierre April 17, 1951. The decision was not issued at the time of writing. See also footnote under Table 8.

‡Rates as of April 20, 1951 for intrastate. These rates are subject to change without notice, and are for Class B full truckloads.

calculate the amount of feed needed before the animals gain back the weight lost. The cost of this feed is the actual loss through shrinkage. It will be influenced by age and weight of the cattle, fill, the method of feeding used during the production period and immediately before shipment, time in transit, the season in which shipment is made, and the type of transportation used.

Case Studies of Feeder Cattle Shipments

Since most feeder cattle are sold to livestock feeders in the Corn Belt region, South Dakota farmers and ranchers have to compete with producers from other areas in selling their livestock. In these markets, quality and price are the most important factors in determining this competitive position. In order to compete on equal terms, the South Dakota producer must be able to deliver his livestock to the Corn Belt feeders at the same price and in the same condition as the livestock from other states. Efficiency and cost of transportation from farm or ranch to the feedlots are therefore of vital importance to livestock producers.

To gain information about the methods in which livestock is handled by the railroads, four case studies of livestock shipments were made by the Department of Agricultural Economics at the South Dakota Experiment Station. In these case studies, cattle shipments were followed through from ranches to the feedlots.

A representative of the Experiment Station accompanied the shipments to observe the weighing, the handling during loading and unloading, and the conditions at various feed-rest stops. The time in transit was also recorded, with special attention being paid to the railroads' methods of routing the shipments.

The observer travelled as the shipper's representative, but did not in any way interfere with the handling of the shipments.

Dependability of Train Schedules.

The first problem facing the livestock shipper is the availability of cars when shipments are planned. Closely connected with this problem is the dependability of the railroads' schedules for arrival and departure of trains, which is of particular importance to shippers who are served by branch lines. On some branch lines no definite train schedules are set, and when such schedules are used, they are often not observed. This often causes the shipper to load his stock several hours before departure. Thus, in one instance, the shipper was informed that the train would depart at 12 p.m.; but it did not leave before 10:50 the next morning, a delay of nearly 11 hours. In none of the cases did the shipper receive information about the actual time of departure before loading. On the main lines, train schedules are more closely observed, although trains in these case studies sometimes were behind schedules.

Poor Routing Prolongs Time in Transit. Efficient routing is of great importance for shipments from the range areas of South Dakota to midwestern markets. Inefficient routing, which prolongs the time in transit, leads to greater losses through shrinkage, and may add to the number of feed and rest stops which are necessary under the 28-hour law for interstate shipments of livestock.

Unfortunately, connections from branch lines to main-line trains are often poor, causing considerable delays which make it necessary to unload livestock for feed and rest stops only a few hours after the cars have left the point of origin. Thus, a shipment leaving Hermosa, South Dakota, at 2:50 a.m., arriving in Chadron, Nebraska, at 7 a.m., was unloaded for a feed and rest stop at Chad-

ron. It did not leave Chadron before 7:45 p.m. that day. Similarly, a shipment leaving Buffalo Gap at 10:50 a.m. arrived in Rapid City at 2:45 p.m., where it was unloaded for a feed and rest stop, leaving 11 hours later. Since the distance from Buffalo Gap to Rapid City is only about 50 miles, the 15 hours which passed before the cars could leave Rapid City seems excessive. In this instance the service was slow on the main line also, making it necessary to have another feed-rest stop at Huron.

Poor connections with main-line trains are no new problem to livestock shippers. Unfortunately, no improvements in this situation are in sight; in fact, it is possible that the situation may become worse. Many railroads are in the process of changing from steam engines to diesel engines which have greater power and are able to pull longer trains. The trend towards heavier motive power and longer trains may cause delays while cars are held in terminals to make up the longer trains. This may penalize livestock shippers on branch lines but the service on the main lines should be improved.

Time in Transit Excessive. In all of the shipments traced, the time in transit seemed excessive, mostly because of delays. One extreme example was presented by the previously mentioned shipment of calves from Buffalo Gap, South Dakota, to Slayton, Minnesota, a distance of 465 miles. The total time in transit on this shipment was 60 hours and 30 minutes, which gives an average speed of less than 8 miles per hour. The net operating time was 27 hours and 35 minutes, while major delays and feed-rest stops accounted for the remaining 32 hours and 55 minutes.

On the whole it seemed that the number of feed-rest stops could have been considerably reduced by more efficient routing. This conclusion is supported by similar studies made by other states par-

ticipating in this research. The problem is of particular importance for shipments moving east through Chicago. The Western lines terminate at Chicago, and cars have to be transferred to other railroads. This is done by a separate railroad, The Indiana Harbor Belt line, which assembles cars for such transfers between railroad terminals. Considerable time is lost while cars are assembled, which often makes it necessary to unload livestock for feed and rest stops at Calumet yards near Chicago. Since additional time is used in assembling cars at the stockyards for transfer to the eastern railroads, delays at Chicago are often substantial.

Conditions at Feed and Rest Stops Vary. The conditions at feed and rest stops varied considerably. Some were entirely satisfactory, providing good pens with ample space and furnishing quality hay. In others the conditions were less satisfactory.

At one stockyard, one of two pens used had no water. At this yard the buyer was charged for 200 pounds of hay per car, all of which had been eaten within an hour, suggesting that it might have been advantageous to have fed more than 200 pounds. The pens at this place were wet and muddy and did not seem to have sufficient drainage.

The railroads seemed somewhat lax in their observance of the 28-hour law on feed and rest stops. The time, in all cases, was calculated from the time of departure to arrival at feed and rest stations. In many instances there is a considerable interval between loading and departure, and similarly between arrival at feed and rest stops and unloading (Table 10).

Another factor which causes considerable loss to shippers is the handling of cars which do not make direct connections with through trains. If a feed and rest stop is not required, such cars frequently are not unloaded, and the live-

Table 10. Time Interval Spent in and Between Rest Stops*

Place	Hours			
	From loading to unloading in feed pens	In pens but not fed	In pens after feeding	Total time in pens
Chadron, Nebr.	18	1	4½	5½
Norfolk, Nebr.	30	12½	5	17½
Proviso-Calumet, Illinois	39	½	4½	5
South Milford, Ind. (destination)	5			

*These observations were made on a shipment of lambs from Hermosa to South Milford, Indiana.

stock may be left in the cars for several hours. Thus, four carloads of cattle at one station arrived at 7 o'clock in the morning when the temperature was 32° and were left standing on the tracks all day in the sun in a temperature which rose to 85° during the day. Such handling exposes livestock to colds and shipping fever.

Variation in Rates for Feed and Handling. The charges for feed and handling vary to a considerable degree at different stockyards. Few of them give shippers a full account of the various charges made. Thus, the shipper has to accept the bills presented to him by the railroads without being able to evaluate the rates charged. An example of the variation in rates among different yards is given in Table 11.

According to a statement of policy dated September 23, 1949, by the Secre-

tary of Agriculture, the amounts of feed considered as sustaining rations in transit are those given in Table 12 below.

Shrinkage Most Important Item in Total Shipping Costs. The case studies were too few in numbers to furnish valuable data about shrinkage losses. The figures for shrinkage on these cases varied from 6.8 percent for a shipment of calves which covered a distance of 465 miles to 12.2 percent for a shipment of yearling steers which covered about 750 miles. These figures are somewhat misleading because the stock in all cases had been off feed and water before weighing at origin. Thus a considerable shrinkage had already occurred before the first weights were taken. However, shrinkage still remains the most important element in total shipping costs. In these cases it varied from 69 to 80 percent of the total transportation costs. It is, therefore, of

Table 11. Charges Made at Feed and Rest Stops,* 1949

Chadron, Nebraska	Price	Norfolk, Nebraska	Price	Calumet, Illinois	Price
800 lbs. of alfalfa	\$17.00	4 bu. of corn	\$12.00	800 lbs. of alfalfa	\$20.00
Feeding and watering ..	7.16	Feeding and handling ..	6.64	Service charges	3.96
Unloading and loading ..	5.52				
Total	\$29.68	Total	\$18.64	Total	\$23.96

*These rates were for a shipment of lambs but would apply to a shipment of cattle also.

Table 12. Sustaining Rations in Transit in Livestock Shipments

Type of Livestock	At first feeding station	At second and subsequent feeding stations
Cattle and beef types of range calves (for each car)	200 lbs. of hay	300 lbs. of hay
Sheep and goats (for each deck)	200 lbs. of hay	300 lbs. of hay
Lambs and kids (for each deck)	100 lbs. of hay	150 lbs. of hay

Table 13. Cost of Transportation for Yearling Steers, Kilgore, Nebr., to Montecello, Iowa. Basis Loading Weights, 1949

Average price per cwt.	Freight rate per cwt.	Feed costs per cwt.	Percent shrinkage	Cost of shrinkage per cwt.	Total shipping costs per cwt. (including shrinkage)	Shrinkage as percentage of total shipping costs
\$21.65*	\$5.81	\$0.26	8.7	\$1.883	\$2.49	75.6

*Prices are based on midpoint for good (500-800 pound) steers, and for good to choice lambs at Omaha, for the week in which shipments were made.

great importance to livestock shippers that serious efforts are made to reduce such losses in transit.

The importance of the losses through shrinkage is shown in Table 13.

Some of the problems confronting the livestock shipper can be solved without greatly added cost. First of all, the shipper should be notified about the arrival of the cars. This is done by some railroads but not by all. Another factor which might help is to stress that livestock is a perishable commodity and should be handled as such. There should also be a closer cooperation between livestock shippers and the railroads in devising schedules of train arrivals and departures on branch lines, so that the shipper knows when his stock is going to be forwarded, how it is routed, and when it can be expected to arrive at destination. By announcing destination and time of shipment to the railroad sufficiently early, the shipper, on his part, can facilitate car routing.

The railroads at present are facing some difficult long range problems, which have carried over from the war years. Introduction of diesel engines has made it possible to speed up the service on the main lines, but may cause delays for shippers on branch lines because cars are waiting at terminals while the longer trains are assembled. The service could, perhaps, be improved by introduction of smaller units on the branch lines, which would give more frequent service without greatly added costs. This has already been done on some railroads in passenger service.

Choice of Markets

Many different factors enter into decisions about the type of market in which to sell. Small lots are usually sold at nearby markets for reasons of convenience; whereas larger lots, because of the investment involved, require more careful selling. The producer who is planning to sell a large lot of cattle usually will choose from various markets. In many instances producers sell through one particular outlet because of habit, or because of a long-time business relationship. In 1947, practically all of the farmers interviewed indicated that they were satisfied with the price they received, and most of them felt that the market chosen offered the highest prices for feeder cattle. This was true whatever method of marketing was used.

A direct comparison between returns at different markets is difficult to make because of lack of price quotations, variations in grade, and absence of information about shrinkage. Certain conclusions regarding selling methods can, however, be made from examination of buying practices of cattle feeders in the state. Over 91 percent of the cattle feeders bought in lots of 20 or more. In answer to a question whether they preferred to buy in lots of 10 or more head, 82 percent answered yes; 13 percent, no; with 5 percent indicating no preference. This indicates that more attention should be paid to assembling larger lots for sale.

Many cattle feeders like to buy relatively large lots of uniform breeding and

are willing to pay a premium for such cattle. Smaller producers could gain advantages by common action in marketing. If cattle from various farms and ranches are assembled in one lot, a better price may be obtained, and a larger market would be available to them. However, such a program does require a certain degree of uniformity in breeding to be successful. Programs of this type have been successful in some regions when implemented by improved breeding practices, and some areas have been able to obtain a premium for their cattle through such cooperation.

Problems of Marketing Feeder Cattle

Producers of feeder cattle have to weigh both price and production factors in deciding when to sell cattle. In certain respects grain marketing is simpler than marketing of livestock, because grain farmers only have to determine the best time to sell from a seasonal viewpoint, while livestock producers have to determine whether their cattle should be sold as calves or carried over as yearlings or two year olds. When this decision as to the year in which to sell is made, a further decision on the week and month is necessary.

The first of these problems, that of choosing whether to sell calves, yearlings or two year olds, is largely dependent upon production factors. No definite solution to this problem can be given from this standpoint unless information is available about pasture conditions, feed and water supplies, the type of buildings and equipment, and the labor situation.

Price factors also are important, but long range prediction of prices are difficult to make with any degree of reliability. The success of such predictions is largely dependent upon the general business outlook at the time the predictions are made. If there is a rising trend

of prices, it may be advisable to keep cattle over for marketing as yearlings or two year olds, whereas sales of calves may be better if the trend of prices is downward. Hence, no general answer can be given from price factors alone.

Another problem, which over the long run may be more important, is to determine what age of cattle is preferred by buyers of feeder cattle. One approach to this problem would be to examine the age of cattle usually purchased by cattle feeders. According to Table 22, feeder buyers in South Dakota bought 67 percent yearlings, with the rest divided nearly equally between calves and cattle two years and older. Since a considerable portion of South Dakota's feeder cattle is sold to other states it might be of interest to show how this compares with buying practices in other Corn Belt states.

For the Corn Belt region as a whole, yearlings were still the most important, although the difference between the age groups was less than in South Dakota. In the Corn Belt region, 45 percent were bought as yearlings, 32 percent as calves and 23 percent at two years or older.⁴ The heavy proportion of yearlings bought may only be a reflection of the fact that more yearlings were offered for sale. To get the feeder buyers' opinion on this question, they were asked what type of cattle they preferred to buy. Of the farmers who answered, 57 percent preferred to buy yearlings, 21 percent calves and 11 percent at two years or more. The remainder had no definite preference.

No serious complaints about the quality of South Dakota feeder cattle were voiced by the buyers. According to the buyers' estimates in a sample covering 10,592 head of cattle, 2.7 percent graded choice, 45.1 percent good, 45.6 percent medium, with the remainder grading

⁴The data refer to 1947 only and may be influenced by particular conditions that year.

common. Complaints were received from some auction operators and some buyers that a great number of producers neglected to dehorn calves and to castrate their bull calves.

In the interview, feeders were asked to state what difference in prices they would pay for dehorned over horned cattle and for steers over bull calves and yearling bulls. According to the answers received, the average price differential in favor of dehorned cattle was 75 cents per hundred weight for calves and 95 cents for yearlings. The differential of steers over bulls averaged \$1.70 per hundredweight for calves and \$2.30 for yearlings. It is evident that the early castration and dehorning of cattle would be advantageous to both producers and feeders.

Most feeder cattle are marketed during the fall months in order to make use of range pastures during the summer months. To obtain the best returns from their cattle, producers require information concerning both the rate of gain during the grazing season under the va-

rious conditions and the seasonal price pattern. Studies which have been made of gains during the summer and fall months show considerable variations in gains depending upon the pasture conditions each year. However, most of these studies have been concerned either with the effects of different intensities of grazing or with the effect of various types of grasses or livestock feeds. For this reason they do not provide information which is useful in determining the best time to sell feeder cattle. In Tables 14 and 15 the reported monthly gains from two of these studies are reproduced.

The results were obtained on experimental pastures and may not accurately reflect actual ranching conditions. The difference between the gains in August in the two studies is considerable and is probably caused by differences in pasture conditions at the two stations. The tables illustrate the difficulties in arriving at any definite conclusions as to the monthly rate of gain. In addition to these two studies, some information on gains of calves has been obtained from

Table 14.* Average Monthly Gains of Steers† on Experimental Pastures Ardmore, South Dakota, 1919-30 (150 acre pasture, entire pasture moderately grazed)

Average Length of Grazing Season, Days	Average Initial No. of Steers	Average Initial Weight Pounds	Average Gain Per Head—Pounds						Total Gain
			May‡	June	July	Aug.	Sept.	Oct.§	
138	11'	696	11	95	62	27	25	18	238

*John R. Mohler and H. C. McPhee, *Effect of Different Methods of Grazing on Native Vegetation and Gains of Steers in the Northern Great Plains*, pp. 11-15, U. S. Department of Agriculture, Washington, D. C. Technical Bulletin No. 547, Table 4, p. 11.

†It was originally planned to graze only two-year-old yearlings but three year olds were used during some years.

‡Ten days only.

§It was not possible to graze during October every year during the period. The average grazing season for all years combined was 138 days.

Table 15.* Monthly Gains of Ten Two-Year-Old Steers on Native Range at Mandan, North Dakota for the Years 1916-35† Moderately Pastured‡

Number of head	Average Gain Per Head—Pounds						Total Gain
	May	June	July	Aug.	Sept.	Oct.	
10	52.5	107.1	68.7	55.5	37.7	31	352.5

*J. T. Savis, *Grazing Investigations on the Northern Great Plains*, Agricultural Experiment Station in cooperation with the U. S. Department of Agriculture, Northern Great Plains Field Station, Mandan, North Dakota.

†Average days pastured: May, 12; June, 30; July, 30; August, 30; September, 29; and October, 21.

‡Seventy-acre pasture.

grazing experiments at the Cottonwood Field Station. (Table 16.)

It can be seen that the gains in the late fall months were relatively small in all the three studies. But this does not necessarily mean that cattle should be sold at an earlier date. In the fall months, cattle put on finish and undergo a hardening process. Thus cattle shipped in the latter part of the fall shrink less in transit than they do earlier in the season. A real com-

parison of the relative advantages of marketing in various months should therefore include data both on weight gains through the season and of the shrinkage in shipment to market. The relatively small gains shown during the fall months give rise to a question whether better returns could be obtained if supplemental feed were given in this period.

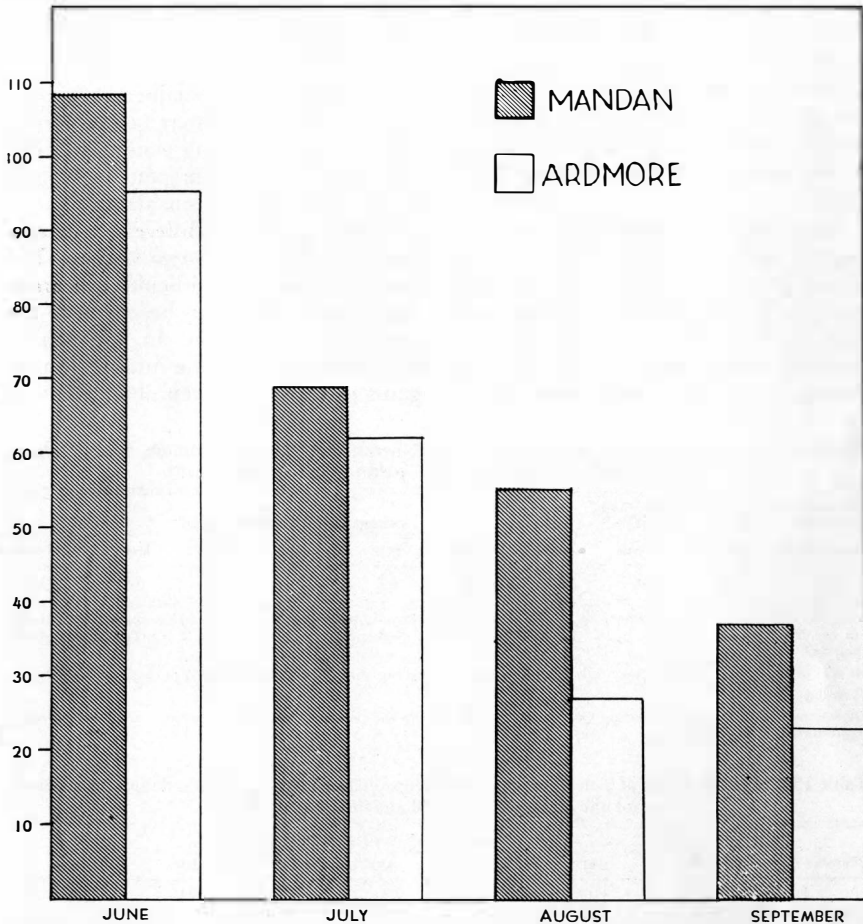


Fig. 3. Monthly gains of steers at Mandan, North Dakota and Ardmore, South Dakota, showing seasonal trend in gains. Data from Tables 14 and 15

Since rate of gain by months is one of the factors influencing the marketing practices of ranchers and farmers, it is important that producers have adequate information on this matter. Apparently

ever, many producers were of the opinion that with the continuance and expansion of the fly-spraying program for cattle, perhaps the gains made in July and August would increase appreciably.

Estimates by farmers of the total gains of feeder cattle of various ages during the grazing season also show a large variation (Table 18).

Table 16. Monthly Gains of Calves on Moderately Grazed Pastures at Cottonwood Range Field Station,* 1942-49

Month	Lbs.
May	48
June	44
July	52
August	56
September	45
October	29

*Unpublished data from the Animal Husbandry Department, South Dakota State College.

there is some difference in opinion among farmers about the rate of gain in various months. Table 17 shows the months which the producers thought were the best and poorest in relation to gains made during the season.

The greatest number believed that the best gains were made in May and June. July and August were placed low because of the heat and flies during these two months. This does not quite correspond to the experimental results where good gains were shown in July. How-

ever, many producers were of the opinion that with the continuance and expansion of the fly-spraying program for cattle, perhaps the gains made in July and August would increase appreciably.

Prices are generally higher during the spring than in the fall, but the gains made during the summer months ordinarily more than offset the seasonal decline in price from the spring. In any particular year the seasonal pattern of prices may vary because of changes in general business conditions. Thus prices in 1947 reached their highest point in November. However, over a long period of time the seasonal pattern of prices

Table 17. Percent of Farmers and Ranchers Selecting Various Months as Poorest and Best with Respect to Gains of Feeder Cattle South Dakota, 1947

	Months in Grazing Season								Total	No. of Replies
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.		
	%	%	%	%	%	%	%	%	%	
Best	4.2	23.4	36.6	8.5	5.8	13.7	6.9	1.0	100.0	418
Poorest	13.6	4.9	6.2	32.6	25.4	4.9	6.4	6.0	100.0	326

Table 18. Producers' Estimates of the Gains Made by Feeder Cattle During a Six-Month Grazing Period

Age	100-200 Pounds	200-300 Pounds	300-400 Pounds	Over 400 Pounds
	Percentage of Producers			
Calves	14.4	45.1	36.3	4.2
Yearlings	22.4	52.6	22.4	2.6
Two Years and Older	18.2	50.0	26.4	5.4

would provide a useful guide in marketing (Table 19, Figure 3).

Table 19. Seasonal Index of Prices for Feeder Cattle, Kansas City 1926-41*

Jan.	98	July	100
Feb.	102	Aug.	98
March	106	Sept.	98
April	105	Oct.	95
May	106	Nov.	94
June	104	Dec.	94

*Data received from Professor C. P. Witson, Department of Agricultural Economics, Kansas State Experiment Station.

It is of interest to compare this index with the marketing practices of farmers. In 1947, the four months September to December accounted for 70 percent of the total sales, with nearly 25 percent being shipped in October, the highest month. A relatively small part of the cattle was sold during the spring when prices were highest (Table 20).

Table 20. Marketing of Feeder Cattle by Months, South Dakota 1947

	Percent		Percent
Jan.	4.0	July	6.9
Feb.	2.3	August	5.8
March6	Sept.	21.9
April	4.7	Oct.	24.6
May	2.2	Nov.	11.9
June	2.9	Dec.	12.2

Methods Used in Buying Feeder Cattle. The proportion of cattle sold and bought at various markets would of course be equal if none had been sold outside the state and none were brought in from other states. However, a large portion of the feeder cattle produced in South Dakota are sold to cattle feeders in other midwestern states, and cattle feeders in the state buy a fairly substantial share of their feeders from other states. For this reason, a separate study of the methods used in buying feeder cattle was made.

Cattle feeding operations are mainly concentrated in the southeastern part of the state, Area 7. In the other areas relatively few feeder cattle were bought, except in Area 1, where a number of feeders and stockers are bought by ranchers to maintain or build up their herd. In order to get a picture of the methods used by buyers, information was collected from 143 known cattle feeders according to lists furnished by county agents and others familiar with the livestock industry. This was then added to the information from the sample to give figures for the state.

Among the more significant conclusions which can be drawn from this material are:

1. More farmers buy their feeder cattle at auctions than at any other market, with direct sales second in importance as a source of supply (Table 21).

Table 21. Percentage of Feeder Cattle Bought Through Various Channels

Terminal public markets	13
Auction	50
Dealers and order buyers	6
Direct	29
Farm Sale and other	2

2. Purchases in lots of 21 head or more include about 90 percent of the total bought, with purchases of 51 head or more constituting more than 58 percent of the total (Table 22).

Table 22. Percent of Feeder Cattle Bought in Lots of Various Sizes

Head	
1 — 5	2
6 — 10	2
11 — 20	7
21 — 50	33
51 and over	58

3. In 1947, 67 percent of the cattle bought were yearlings, of the remainder,

17 percent were two years and over, and 16 percent calves (Table 23).

**Table 23. Purchases of Feeder Cattle
by Age Groups**

	Percent
Calves	16
Yearlings	67
Two Years and over	17

One important group of cattle feeders, the commercial feedlot operators, were not included in the study. Some of these operate their feedlots on a continuous basis, buying feeders whenever their feedlot cattle are sold for slaughter. Although there are relatively few such enterprises in the state, they account for a considerable number of the feeder cattle bought. Because of the continuous buying and selling operations it proved to be impossible to obtain the total number bought, and it is therefore impossible to determine the relative importance of the various markets for this type of operation. From an examination of the schedules obtained it can be said that the auctions are less important than terminal public markets, dealers and order buyers, and direct sale as a source for feeder cattle for these operators.

Summary

In selling feeder cattle, South Dakota producers have various alternative mar-

ket outlets. The survey shows that over 40 percent of these cattle are sold through livestock auctions and nearly 35 percent through terminal public markets. Dealers, order buyers, and direct sale accounted for most of the remainder. About 54 percent of the cattle were sold in lots of 11 to 50 head.

Trucks are the most important means of transportation from farm to markets and from markets to feedlots, with 88 percent being carried to the first markets by truck. From market to feedlots, 75 percent were carried by truck.

Transportation expenses are generally the largest element in marketing cost. This is particularly true for longer shipments where shrinkage losses are relatively large. A few case studies of shipments show that some improvements in transportation services are desirable.

One of the important problems facing the producer of feeder cattle is the time in which to market his cattle. No definite recommendations can be made on the basis of this study. The rate of gain in the fall months, September and October, has been relatively small in experiments which have been conducted in South and North Dakota. Prices of feeder cattle are generally highest during spring and lowest in November and December. However this normal seasonal pattern has been partly offset since 1946 by the rising trend of cattle prices.