THE USE OF KANSAS ROADS IN MARKETING LIVESTOCK

by

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INTRODUCTION

Purpose and Objectives

This study is a portion of a larger study dealing with the use of roads in Kansas. Briefly stated, the following objectives were set up to guide the course of this study:

1. To determine the origin and volume of trucked-in receipts of livestock at the six principal markets for Kansas,

2. To find the relationship between the origin of trucked-in receipts at the six markets studied, and the use of roads and highways leading to these markets,

3. To determine the extent to which farmers use their own automobiles and trucks in marketing livestock, the type of roads used, and the number of miles traveled in marketing.

Procedure

The markets at Kansas City, Wichita, Salina, St. Joseph, Dodge City, and Parsons were thought to be the more important livestock markets within the state or bordering it.

To obtain the information upon which this study was based, a personal survey of the six markets was made. Practically the same procedure was followed at each of the markets studied. A random sample of the freight bills for trucked-in receipts for each market day in 1947 was taken. More weight was given to the season of the year in which receipts were largest. Also more

weight was given to days of the week in which volume of sales was heaviest. A 2-5 percent sample was taken at each market studied, depending upon the size of the market. A larger percentage sample was required at the smaller markets to get a more accurate picture of the conditions at that particular market. The sample data taken at each of the markets included the address of the seller of each shipment of livestock. The address was taken as the point of origin. It was then possible to determine the approximate distance each shipment moved to reach market and the most probable highways used.

In addition, a close check was made at each market of the out-of-state trucked-in receipts to determine what percentage of the total receipts of that market came from Kansas.

To supplement this information, mail questionnaires were sent to a representative group of 791 farmers and stockmen in various parts of the state to determine the use farmers made of roads and highways in marketing livestock. Replies were received from 167 informants. Farmers and stockmen to whom mail questionnaires were sent were asked to report for the calendar year 1947 the number of each species of livestock marketed, the distance to market for each species, the mileage of unimproved dirt road, gravel road, and hard surfaced road from the farm to the market usually used for each species, and the estimated number of trips in marketing each species.

The returned questionnaires were edited and usable schedules were tabulated and summarized on the basis of type of farming areas, Appendix. An analysis of the data obtained through ques-

tionnaires, personal interviews, and actual observation formed the basic material for this paper.

Limitations

The limitations of this study may be briefly stated as follows:

1. Data are based on a small percent of the total number of livestock markets within the state. In addition to the six markets studied, there are numerous out-of-state markets for Kansas livestock, approximately 150 livestock auctions in the state, numerous packers, and local buyers who also take a large volume of livestock.

2. Data are based on a small percentage sample of the total number of farms in the state. According to the 1945 census, there are 141,192 farmers in the state. In this study only 167 farmers' replies were usable.

3. The data were subject to bias due to the fact that the larger farms responded to the mail questionnaires in a much larger proportion than did the smaller farms.

Data presented for averages and totals for the various markets, areas, and for the state as a whole should be considered as rough approximations rather than mathematically accurate figures.

Review of Literature

Reports showing receipts of livestock for the major livestock

markets of the United States bring out the fact that trucks are the principal means of transporting livestock to market at the present time. In 1946, 57 percent of the cattle and calves, 61 percent of the hogs, and 36 percent of the sheep and lambs received at 67 public markets in the United States were transported by trucks (3). A study made in Kansas in 1940 showed that 84 percent of the cattle, 98 percent of the calves, 99 percent of the hogs, and 79 percent of the sheep and lambs moved from the farms by trucks (1).

Of the total receipts during the three years, 1944-46, at the 67 most important livestock markets in the United States, the percentage that trucked-in receipts represented of the total receipts was as follows (3):

	1946 Percent	1945 Percent	1944 Percent
Cattle.....	57.2	58.1	59.2
Calves.....	62.3	65.0	66.6
Hogs.....	65.9	60.3	66.7
Sheep and lambs...	35.9	34.3	32.3
Horses and mules..	37.2	40.2	40.8

The percentage of livestock that was trucked to market at 17 important markets in the United States increased from 1916 until 1946 when well over one-half of the total receipts at these markets were trucked-in or driven-in receipts, Tables 1, 2, 3, and 4. Not only in Kansas but in other states as well trucked-in receipts of livestock are important.

Transportation needs for livestock are particularly important in Kansas since livestock provides a large proportion of the farm income, Tables 5 and 6. A delay in marketing due to un-

Table 1. Total receipts of cattle and number and percent of drive-ins at seventeen markets./1

Year	Receipts	Drive-Ins	Percent
1916	11,876,382	163,621	1.38
1917	15,146,701	237,041	1.56
1918	16,836,383	289,344	1.72
1919	15,858,303	303,376	1.91
1920	13,042,481	289,940	2.22
1921	11,132,041	274,206	2.46
1922	13,438,902	387,262	2.88
1923	13,857,338	407,237	2.94
1924	13,861,535	469,616	3.36
1925	13,724,381	641,770	4.68
1926	13,752,794	791,999	5.76
1927	12,792,744	947,537	7.41
1928	11,850,417	1,268,194	10.70
1929	11,394,713	1,537,054	13.81
1930	10,941,214	2,035,370	18.60
1931	10,712,919	2,664,814	24.87
1932	9,334,429	3,237,581	34.68
1933	9,853,906	4,500,064	35.67
1934	15,343,131	5,763,628	37.56
1935	11,192,216	5,757,082	51.44
1936	11,763,277	6,645,277	56.49
1937	11,182,985	5,859,314	52.39
1938	10,316,628	6,069,037	59.09
1939	10,043,005	6,260,683	62.34
1940	10,217,340	6,809,491	66.45
1941	11,000,605	7,653,941	69.58
1942	12,998,971	8,440,229	64.93
1943	13,446,477	8,218,836	61.03
1944	14,690,321	8,975,064	61.10
1945	15,498,280	9,582,186	61.83
1946	14,236,059	8,973,398	63.03
10-yr. av.			
1920-29	12,884,747	704,862	5.47
1930-39	11,068,304	4,881,395	44.11

/1 Chicago, Cincinnati, Denver, Fort Worth, Indianapolis, Kansas City, St. Louis, Sioux City, St. Paul, Wichita, Louisville, Milwaukee, Oklahoma City, Omaha, Portland, and St. Joseph.

Source: Drive-In Receipts of Livestock (U.S.D.A.), H. D. Lantz.

Table 2. Total receipts of calves and number and percent of drive-ins at seventeen markets./1

Year	Receipts	Drive-Ins	Percent
1916	1,483,670	60,821	4.10
1917	1,960,418	126,024	6.43
1918	2,199,524	161,241	7.33
1919	2,995,630	249,502	8.33
1920	3,260,363	304,130	9.49
1921	3,371,247	297,939	8.84
1922	3,839,949	363,409	9.44
1923	3,901,641	399,552	10.24
1924	4,057,974	423,184	10.43
1925	4,310,002	568,909	13.20
1926	4,168,862	657,540	15.77
1927	3,944,529	706,580	17.91
1928	3,803,080	866,324	22.79
1929	3,683,256	1,058,409	28.74
1930	3,713,342	1,322,047	35.64
1931	3,491,930	1,576,052	45.13
1932	3,119,912	1,605,476	52.90
1933	3,173,227	1,912,919	60.28
1934	5,205,403	2,444,349	46.97
1935	3,698,251	2,698,251	64.51
1936	3,769,988	2,385,625	67.27
1937	4,075,738	2,563,011	65.00
1938	3,502,176	2,649,054	65.10
1939	3,441,400	2,280,086	64.49
1940	3,193,700	2,219,250	70.72
1941	3,101,600	2,258,577	74.21
1942	3,379,123	2,301,563	69.73
1943	3,016,244	2,356,184	72.22
1944	3,966,902	2,178,264	72.13
1945	3,746,297	2,861,372	70.76
1946	3,669,929	2,500,328	68.13
10-yr. av.			
1920-29	3,838,667	564,548	14.75
1930-39	3,719,037	2,097,296	56.39

/1 Chicago, Cincinnati, Denver, Fort Worth, Indianapolis, Kansas City, St. Louis, Sioux City, St. Paul, Wichita, Louisville, Milwaukee, Oklahoma City, Omaha, Portland, and St. Joseph.

Source: Driven-In Receipts of Livestock, 1947, (U.S.D.A.), H. D. Lantz.

Table 3. Total receipts of hogs and number and percent of drive-ins at seventeen markets./1

Year	Receipts	Drive-Ins	Percent
1916	33,545,340	579,102	1.79
1917	28,396,707	842,788	2.97
1918	33,524,177	1,415,649	4.21
1919	29,698,138	1,921,776	5.73
1920	29,149,308	2,063,212	6.95
1921	31,008,172	2,273,080	7.30
1922	39,762,213	2,650,799	8.55
1923	39,373,337	3,234,421	8.83
1924	31,639,438	3,476,902	11.08
1925	25,387,423	3,504,539	14.37
1926	29,080,509	4,221,536	18.20
1927	33,164,708	5,253,300	24.44
1928	31,928,515	8,105,434	29.68
1929	29,534,184	9,447,093	35.59
1930	29,188,056	10,512,661	44.52
1931	25,730,824	12,994,227	54.63
1932	30,646,861	14,056,566	61.56
1933	25,247,394	18,384,963	66.79
1934	13,340,061	16,863,090	69.43
1935	18,828,181	9,609,602	70.74
1936	15,410,312	13,319,753	70.84
1937	16,602,329	10,917,257	71.43
1938	16,998,715	12,142,439	75.34
1939	19,128,794	14,410,867	74.91
1940	24,381,968	18,265,453	75.82
1941	21,276,102	16,130,953	73.38
1942	24,627,099	18,072,005	70.97
1943	29,262,279	20,702,279	70.77
1944	31,410,504	22,228,008	65.75
1945	17,263,492	11,349,975	67.28
1946	19,789,442	13,314,079	68.13
10-yr. av.			
1920-29	32,318,326	4,440,040	13.74
1930-39	22,455,388	13,369,042	59.54

/1 Chicago, Cincinnati, Denver, Fort Worth, Indianapolis, Kansas City, St. Louis, Sioux City, St. Paul, Wichita, Louisville, Milwaukee, Oklahoma City, Omaha, Portland, and St. Joseph.

Source: Driven-In Receipts of Livestock, 1947, (U.S.D.A.), H. D. Lantz.

Table 4. Total receipts of sheep and lambs and number and percent of drive-ins at seventeen markets./1

Year	Receipts	Drive-Ins	Percent
1916	14,194,631	181,015	1.28
1917	13,292,540	217,412	1.64
1918	14,860,797	253,931	1.71
1919	17,980,867	394,720	2.20
1920	14,724,389	505,203	3.43
1921	14,888,875	615,904	4.14
1922	13,462,963	835,336	6.20
1923	14,278,026	869,542	6.09
1924	14,378,345	849,714	5.91
1925	14,237,520	861,854	6.05
1926	15,539,058	1,108,427	7.13
1927	14,638,566	1,716,550	9.44
1928	16,976,472	1,385,983	10.75
1929	16,585,061	2,123,270	12.80
1930	18,144,574	2,545,430	14.03
1931	19,684,051	3,536,990	17.10
1932	18,240,241	3,949,693	21.64
1933	16,946,746	4,264,928	25.17
1934	16,506,031	4,208,373	25.38
1935	15,647,631	4,928,867	31.50
1936	15,056,946	4,603,549	30.57
1937	15,745,990	4,733,790	30.06
1938	16,155,866	4,997,823	30.90
1939	15,010,197	4,852,310	32.33
1940	14,454,188	5,095,798	35.25
1941	14,133,295	5,353,934	37.88
1942	17,908,841	6,367,451	35.55
1943	19,532,941	7,045,530	36.07
1944	18,812,514	6,687,747	35.55
1945	17,604,628	6,652,984	37.62
1946	15,960,132	6,541,878	40.99
10-yr. av.			
1920-29	14,874,507	1,087,171	7.31
1930-39	16,321,827	4,261,725	25.33

/1 Chicago, Cincinnati, Denver, Fort Worth, Indianapolis, Kansas City, St. Louis, Sioux City, St. Paul, Wichita, Louisville, Milwaukee, Oklahoma City, Omaha, Portland, and St. Joseph.

Source: Driven-In Receipts of Livestock, 1947, (U.S.D.A.), H. D. Lantz.

Table 5. Cash farm income from marketings and government payments for Kansas, 1935-39 to 1947.

Year	All crops	Livestock and livestock products	Total	Government payments	Cash farm income from marketings and government payments
		Millions of dollars			
1935-39	95	165	259	28	288
1940	88	157	245	39	284
1941	163	223	387	32	418
1942	220	315	571	34	605
1943	237	478	715	42	757
1944	318	404	721	25	746
1945	345	447	791	22	813
1946	387	489	876	21	897
1947	641	626	1,276	18	1,284
		Percentage distribution			
1935-39	32.9	57.3	90.2	9.8	100.0
1940	30.9	55.3	86.2	13.7	100.0
1941	39.0	53.4	92.4	7.6	100.0
1942	36.3	58.0	94.3	5.7	100.0
1943	31.4	63.1	94.5	5.5	100.0
1944	42.6	54.1	96.7	3.3	100.0
1945	42.3	54.9	97.2	2.8	100.0
1946	43.1	54.5	97.6	2.4	100.0
1947	49.9	48.8	98.7	1.3	100.0

Source: Reports of the United States Department of Agriculture, Bureau of Agricultural Economics: 1940-42, "Cash Receipts from Farm Marketings", January 1946; 1943-45, Livestock, "Farm Income Situation", April 1946; 1943-45, Crops, "Farm Income Situation", February 1946; 1945-46, "Farm Income Situation", May 1947; 1947, "Farm Income Situation", January 1948. The percentages were calculated.

Table 6. Cash farm income from marketings and government payments for Kansas, 1945.

Crops	Production	Value
Winter wheat	207,917,000 bu.	$309,796,000
Spring wheat	44,000 bu.	66,000
Corn, all purposes	72,864,000 bu.	79,422,000
Oats	17,668,000 bu.	12,268,000
Barley	6,702,000 bu.	6,501,000
Rye	788,000 bu.	930,000
Flax	695,000 bu.	1,890,000
All sorghum, for grain	16,632,000 bu.	19,626,000
All sorghum, for forage	2,350,000 tons	20,210,000
All sorghums, for silage	2,100,000 tons	10,920,000
Sweet sorghums, syrup	100,000 gals.	140,000
Broom corn	2,860,000 lbs.	364,000
Irish potatoes	1,476,000 bu.	2,288,000
Sweet potatoes	276,000 bu.	662,000
All tame hay	1,951,000 tons	23,412,000
Wild hay	718,000 tons	6,677,000
Alfalfa seed	220,000 bu.	4,290,000
Sweet clover seed	119,000 bu.	714,000
Red clover seed	37,000 bu.	673,000
Lespedeza seed	19,200,000 lbs.	998,000
Soybeans (beans)	2,740,000 bu.	5,617,000
Cowpeas (peas)	12,000 bu.	36,000
Popcorn	9,240,000 bu.	314,000
Sugar beets	52,000 tons	383,500
Tobacco	300,000 lbs.	135,000
Cotton	34,000 lbs.	7,000
Apples	270,000 bu.	837,000
Peaches	63,000 bu.	176,000
Pears	117,000 bu.	187,000
Grapes	4,500 tons	342,000
Garden products	---	1,288,000
Total of all crops		$511,269,000
Federal Government Soil Conservation Benefit payments, 1945		18,675,000

Other Products	Quantity	Farm Value
Livestock produced	---	$218,470,000
Chicken and eggs produced	---	80,646,000
Turkeys produced	---	5,959,000
Wool clipped	5,131,000 lbs.	1,898,000
Milk produced	3,061,000 (1000 lbs.)	74,994,000
Honey and beeswax	2,653,000 tons	520,000
Total value of other products		$382,487,000

Source: Same as Table 5.

favorable roads can mean the difference between a profit and a loss to the producer. Roads also have a great deal to do with the condition and value of the livestock when it reaches market and the amount of shrinkage that may occur enroute.

A study by the Corn Belt Livestock Marketing Research Committee in 1940 showed that more livestock were moved from farms by hired trucks than by farm trucks, buyers' trucks or any other method. Sixty-one percent of the cattle, 48 percent of the calves, 66 percent of the hogs, and 57 percent of the sheep and lambs moved from the farm in hired trucks. Seventeen percent of the cattle, 30 percent of the calves, 21 percent of the hogs, and 27 percent of the sheep and lambs moved in farm trucks.

Of the total receipts at concentration yards, trucked-in receipts accounted for 97 percent of the cattle, 99 percent of the calves, 94 percent of the hogs, and 85 percent of the sheep and lambs. Of the livestock received at auctions in the corn belt region, 90 percent of the cattle, 93 percent of the calves, 96 percent of the hogs, and 92 percent of the sheep and lambs were moved from the farm by truck. Receipts at terminal markets received by trucks were also large. Sixty-nine percent of the cattle, 75 percent of the calves, 78 percent of the hogs, and 44 percent of the sheep and lambs received at all terminal markets came in by truck. More than 85 percent of each species of livestock purchased direct by packers came in by truck (1).

Some types of markets operate over much wider areas than others. However, considerable variation exists in the areas from which livestock was received by truck at various types of markets.

This may depend on factors such as the volume of livestock handled, the density of production in the area, and the existing competition for livestock.

Country dealers receive much of their livestock from local areas. In 1940 the dealers in the Corn Belt Region obtained about three-fourths of the cattle and calves, four-fifths of the hogs, and two-thirds of the sheep and lambs from within 25 miles (1).

The livestock delivered to the assembly points of dealers by farmers came from distances on the average longer than those picked up in their own trucks.

Local cooperative associations operated in a more limited area than most other types of markets. The cooperative associations received practically all of their livestock from within 25 miles (1).

More than 70 percent of the different species of livestock were received at concentration yards or local markets from within 25 miles. Practically no livestock picked up by trucks operated by concentration yards came from distances of 100 miles or more (1).

At livestock auctions, about 50 percent of the cattle and more than 60 percent of the calves, hogs, and sheep and lambs received by trucks came from within 25 miles of the auctions at which they were sold (1).

A study of the Kansas City market in 1942 and 1943 showed that approximately 10 miles of travel was required on the average to assemble a load of livestock for a standard truck and about 15

to 20 miles for a semitrailer load. When roads permitted, truckers often assembled their loads of more than one consignment by driving from farm to farm until the load was complete. Frequently, however, it was necessary for the trucker to haul two or more partial loads to a point and then load these onto the truck going to market (2).

Average distances traveled to market varied by type of truck and operator. Small trucks were used for the shorter distances. The average distance in 1943 for pick-up trucks going to the Kansas City market was 38 miles; for the standard trucks, 71 miles; and for semitrailers, 142 miles. The over-all average for trucks going to the Kansas City market in December, 1943, was 85 miles.

Many of the trucks, on their return trip home, hauled different kinds of commodities, feed and livestock being the main commodities. More than one-half of the loads consisted of these two commodities. Other important items were coal, sand, gravel, lime, fertilizer, and groceries. At the time of the survey, return loads required an average of about 3.2 miles extra for delivery (2).

Of the 384 truck operators interviewed in 1943, 213 had no suggestions for improving livestock trucking conditions, 42 said that nothing could be done, 21 that there should be a centrally located farm for loading into large trucks, 20 thought that the farmers should have their livestock ready to load when the trucks arrived. Twelve truckers thought that better roads would make possible more economical transportation of livestock. All who

made this suggestion were non-farmers (for-hire-haulers) who spent much of their time on the road (2).

ORIGIN AND VOLUME OF TRUCKED-IN RECEIPTS AT THE SIX MARKETS STUDIED

Kansas City. The study of freight bill tickets on trucked-in receipts showed that approximately 26 percent of the trucked-in receipts at the Kansas City market came from counties that were 0-50 miles from the market, 49 percent came from counties that were 50-100 miles of Kansas City, 20 percent came from counties that were 100-150 miles away, 3 percent came from counties 150-200 miles from the market, and 2 percent came from counties that were over 200 miles from the Kansas City market, Table 7.

U. S. Highways 24 and 40 probably were the most frequently used highways leading in to the Kansas City market, carrying approximately 29 percent of the total volume of trucked-in receipts; U. S. 69 was the next most frequently used highway with approximately 25 percent of the total volume of trucked-in receipts coming in over it; U. S. 50 N and S carried almost 20 percent of the trucked-in receipts; approximately 10 percent of the total volume came to the Kansas City market over U. S. Highway 169; over 6 percent came in over U.S. 75 and 50; with 5.7 percent coming in over U. S. 36 and 73; and the remaining 2.6 percent coming to the Kansas City market over U. S. Highways 54, 77, 169, and Kansas Highway 99, Table 7.

The largest volume of trucked-in receipts came from the eastern counties, particularly those centering around Franklin County. Very little of the total volume of trucked-in receipts

Table 7. A frequency distribution of the number and percent of trucks using the principal highways leading to the Kansas City market and the number and percent of trucks originating from various distances from the market, 1947.

Highway	Number of miles traveled							Percent of total
	0-50	50-100	100-150	150-200	200-250	Over 250	Total	
US 24-40	5,964/1	4,007	2,935	652	139	139	13,836	29.0
US 69	6,291	5,592	326	0	0	0	12,209	26.0
US 50 N&S	0	6,557	2,003	186	186	139	9,271	19.7
US 169	0	4,473	326	0	0	0	4,799	10.2
US 75-50	0	2,050	932	0	0	0	2,982	6.4
US 36-73	46	186	2,143	279	0	0	2,654	5.7
K 99	0	0	605	93	0	0	698	1.5
US 54	0	0	0	233	0	0	233	.5
US 77	0	0	139	46	0	0	185	.4
US 169-54	0	0	0	0	93	0	93	.2
Total	12,301	23,065	9,409	1,489	418	278	46,960	
Percent of total	26	49	20	3.1	0.9	0.6		100.0

/1 Includes 1,285 trucks from Wyandotte County that may have traveled over U. S. Highways 40, 75, 50, 169, Kansas Highways 10, 32, or 45.

Source: Sample data.

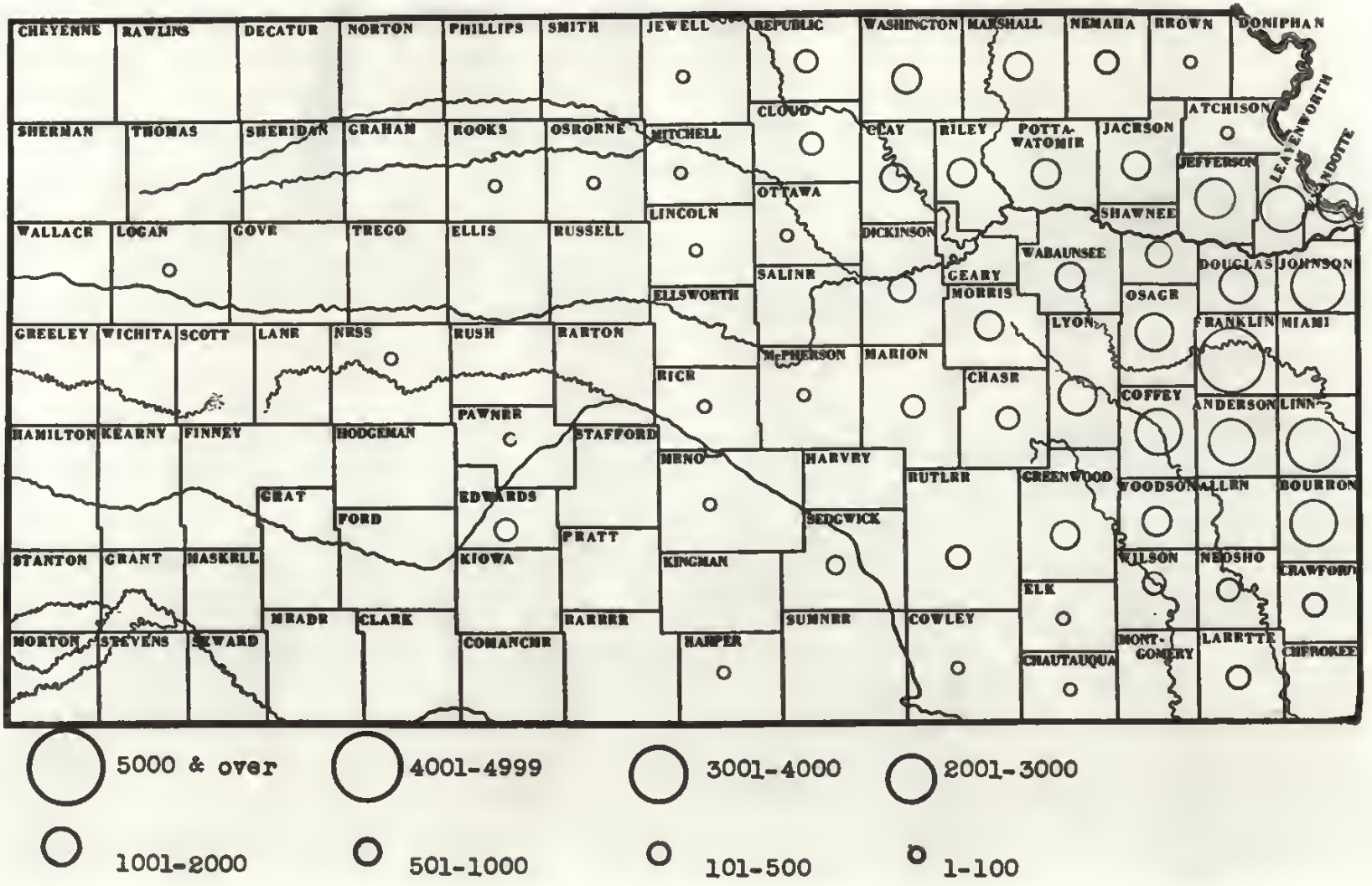

Fig. 1. Origin of trucked-in receipts at the Kansas City market, by number of trucks, 1947.

came from the western counties of the state. In fact, the survey showed only six of the counties west of the center of the state sending any livestock at all to the Kansas City market by truck, Fig. 1.

Wichita. Approximately 82 percent of the trucked-in receipts to the Wichita market came from counties less than 50 miles away, 14 percent came from counties 50-100 miles from the Wichita market, 3 percent of the total volume of trucked-in receipts came from counties 100-150 miles away, and only 1 percent of the total came from counties that were over 150 miles from the Wichita market, Table 8.

U. S. Highway 81 was the most frequently used highway leading to the Wichita market, bringing in approximately 46 percent of the total volume of trucked-in receipts. U. S. 54 was next in importance carrying 23 percent of the total volume. Fourteen percent came in over U. S. 50 N and S. Twelve percent came in to Wichita over U. S. 166. The remaining 5 percent of the trucked-in receipts came in to the Wichita market over U. S. Highway 160, Table 8.

The largest volume of the trucked-in receipts came from the immediate vicinity of Wichita; i.e., from Sedgwick, Butler, Sumner, and Cowley counties. Some of the southwestern counties sent small volumes of livestock to the Wichita market by truck, but their volumes were insignificant compared to the volumes of counties nearer Wichita, Fig. 2.

Parsons. Approximately 49.3 percent of the total trucked-in receipts to the Parsons market came from counties within 25 miles

Table 8. A frequency distribution of the number and percent of trucks using the principal highways leading to the Wichita market and the number and percent of trucks originating from various distances from the market, 1947.

Highway	Number of miles traveled: 0-50	50-100	100-150	Over 150	Total	Percent of total
US 81	29,562/1	250	0	0	29,812	46
US 54	10,937	2,437	562	812	14,784	23
US 50 N&S	5,312	2,625	937	125	8,999	14
US 166	4,625	3,375	0	0	8,000	12
US 160	1,875	687	250	0	2,812	5
Total	52,311	9,374	1,749	937	64,371	
Percent of total	82	14	3	1		100

/1 Includes 15,676 trucks from Sedgwick County that may have traveled over U. S. Highways 81 and 54 and Kansas Highways 42, 15, 49, and 96.

Source: Sample data.

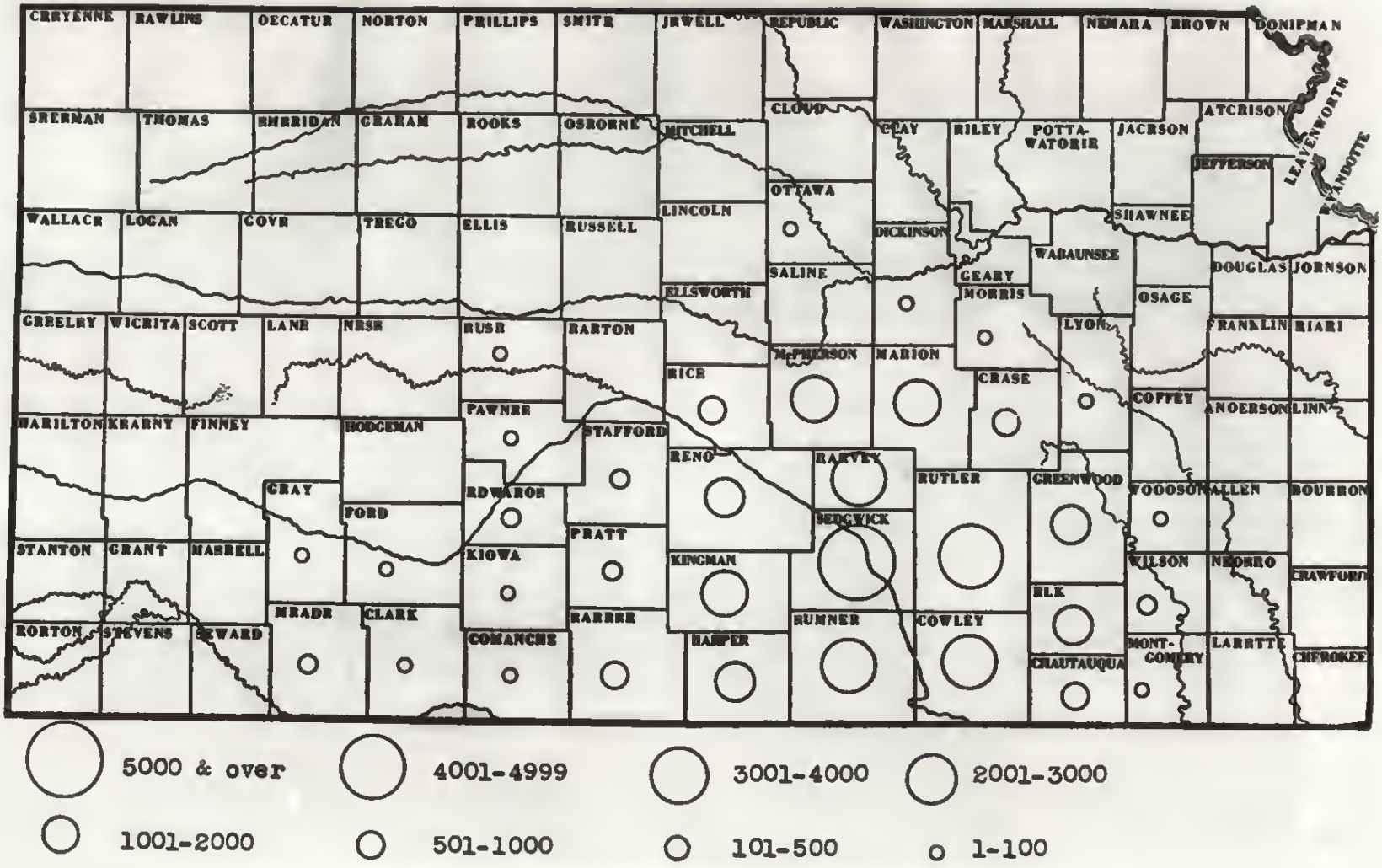

Fig.2. Origin of truck-in receipts at the Wichita market, by number of trucks, 1[illegible].

of the market. Fifty percent of the total volume of trucked-in receipts came from counties 25-50 miles away and only 25 percent came from counties that were 50-75 miles from the Parsons market, Table 9.

Table 9. A frequency distribution of the number and percent of trucks using the principal highways leading to the Parsons market and the number and percent of trucks originating from various distances from the market, 1947.

Highway	Number of miles traveled				
	0-25	25-50	50-75	Total	Percent
US 59	14,664/1	2,418	0	17,082	59
US 69-160		5,382	0	5,382	18
US 166-75		4,953	78	5,031	16.8
K 96		2,145	0	2,145	7.2
Total	14,664	14,898	78	29,640	
Percent of total	49.3	50.2	.25		100.0

/1 Includes 9,495 trucks from Labette County which may have traveled on U. S. Highways 160 and 59 and Kansas Highway 96.

Source: Sample data.

U. S. Highway 59 was the most frequently used highway, bringing in approximately 57 percent of the total receipts. U. S. 69 and 160 brought in approximately 18 percent. U. S. 166 and 75 were responsible for 16.8 percent of the total trucked-in receipts. Kansas Highway 96 was responsible for approximately 7.2 percent of the total volume of trucked-in receipts to the Parsons market, Table 9.

The area from which trucked-in receipts to the Parsons market originated was the most concentrated of any of the markets studied. Labette and Neosho counties supplied the largest vol-

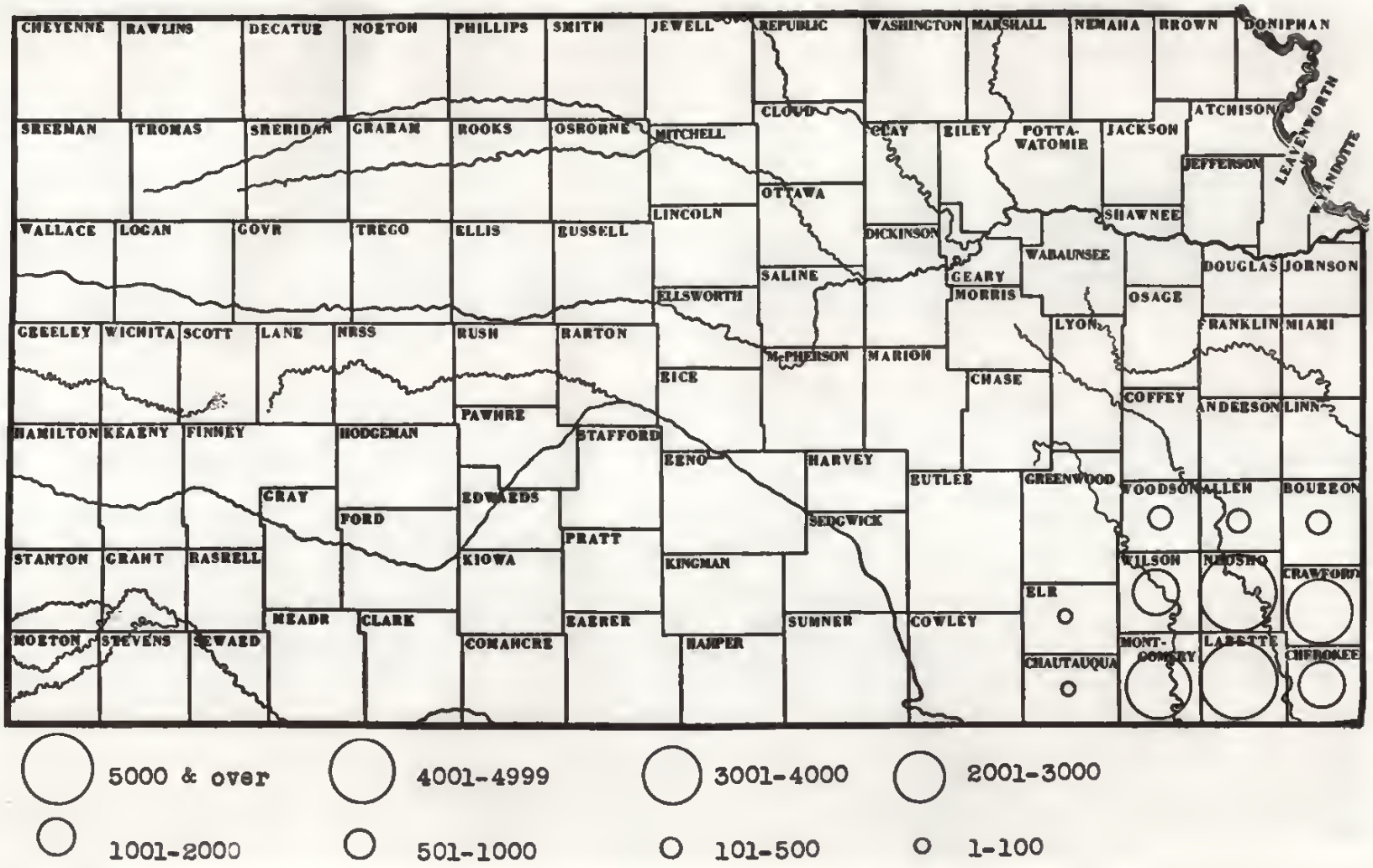

Fig. 3. Origin of truck-in receipts at the Parsons market, by number of trucks, 1947.

umes, but Montgomery and Crawford counties also supplied sizable volumes of livestock as did Wilson and Cherokee counties. Several of the adjoining counties trucked in small volumes of livestock, but their total was small compared to the six counties mentioned, Fig. 3.

St. Joseph. Fifty-one percent of the total trucked-in receipts to the St. Joseph market came from 25-50 miles away from the market. Twenty percent came from counties 50-75 miles away, 19 percent came from counties within 25 miles, 5 percent came from counties 75-100 miles away, and the remaining 4 percent came from counties that were over 100 miles away from the St. Joseph market, Table 10.

U. S. Highway 36 was the most frequently used highway with approximately 61 percent of the total volume of trucked-in receipts coming in to the St. Joseph market over it. U. S. Highway 59 brought in approximately 22 percent of the trucked-in receipts, 10 percent came over U. S. Highways 75 and 36, 3.5 percent came over U. S. 24 and 40, and the remaining 3 percent came to the St. Joseph market over U. S. 73, 69, 169, and 50 N and S, Table 10.

Figure 4 shows that although the point of origin of trucked-in receipts at the St. Joseph market were concentrated with the counties surrounding the market, supplying most of the trucked-in receipts, some livestock came in from counties as far west as Stafford and Barton counties and as far south as Montgomery. The greatest volumes came from Brown, Nemaha, Jackson, Atchison, and Jefferson counties.

Salina. Approximately 65 percent of the trucked-in receipts

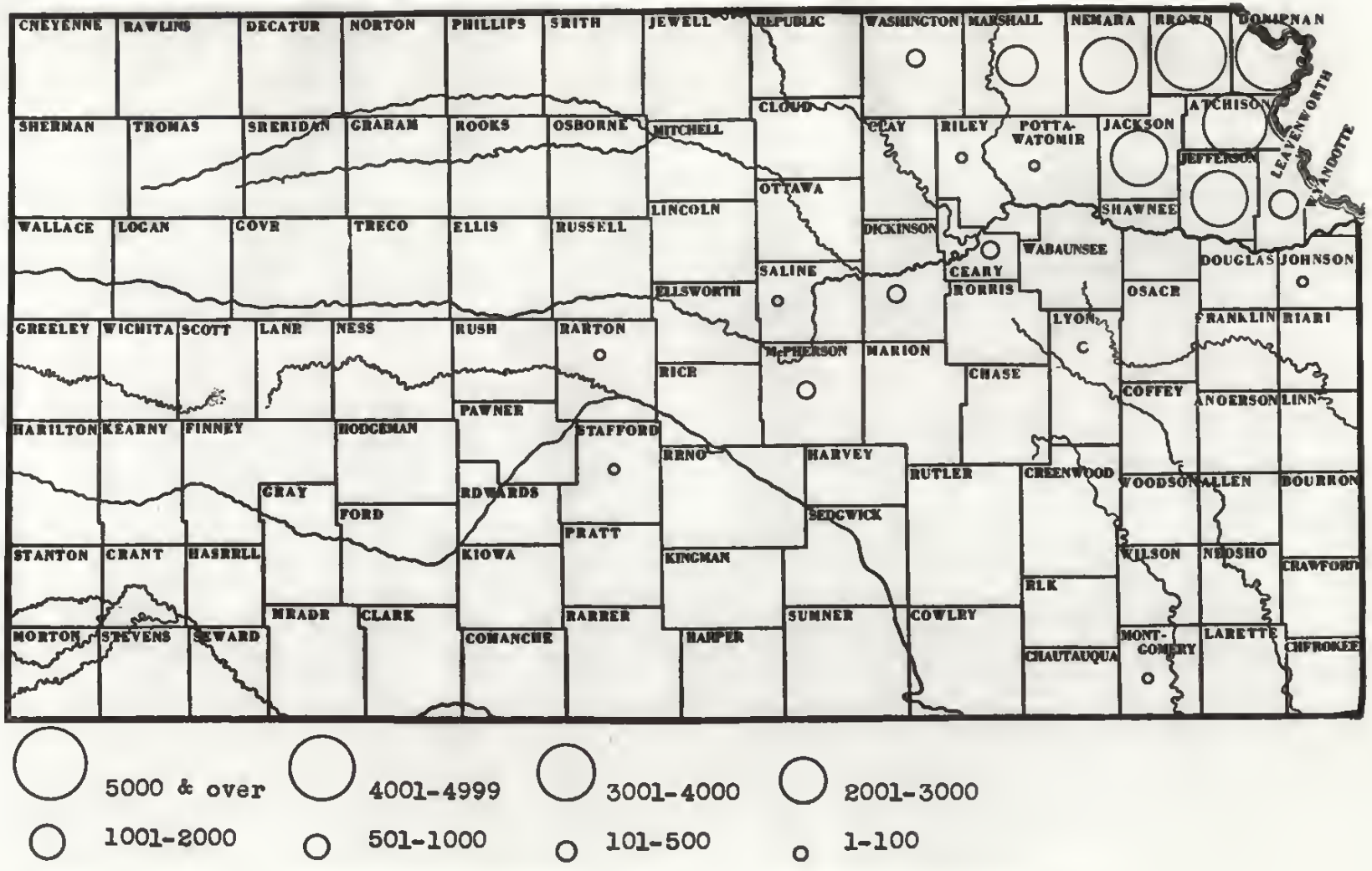

Fig.4. Origin of trucked-in receipts at the St.Joseph market, by number of trucks, 1947.

Table 10. A frequency distribution of the number and percent of trucks using the principal highways leading to the St. Joseph market and the number and percent of trucks originating from various distances from the market, 1947.

Highway	Number of miles traveled								Percent of total
	0-25	25-50	50-75	75-100	100-150	150-200	Over 200	Total	
US 36	5,292/1	7,560	2,646	1,386	252	0	0	17,136	61
US 59	0	6,268	0	0	0	0	0	6,268	22
US 75-36	0	0	2,898	0	0	0	0	2,898	10
US 24-40	0	0	0	126	315	252	0	693	3.50
US 73	0	441	0	0	0	0	0	441	1.50
US 50 N&S	0	0	0	0	31	220	158	409	1.30
US 69-169	0	0	31	0	0	31	0	62	.02
Total	5,292	14,269	5,575	1,512	598	503	158	27,907	
Percent of total	19	51	20	5.4	2.5	1.8	0.5		100.0

/1 Includes [illegible] trucks from Doniphan County which may have traveled on U. S. Highways 36 and 59 and Kansas Highway 7.

Source: Sample data.

to the Salina sales pavilion came from counties within 25 miles of the market. Twenty-nine percent of the total volume came from counties that were between 25-50 miles away from Salina, 4 percent came from counties 50-75 miles away, and 2 percent of the total volume of trucked-in receipts came from counties that were over 75 miles away from the Salina market, Table 11.

Table 11. A frequency distribution of the number of trucks using the principal highways leading to the Salina sales pavilion and the number and percentage of trucks originating from various distances from the market, 1947.

Highway	Number of miles traveled					
	0-25	25-50	50-75	over 75	Total	Percent
US 81	2,955/1	283	83	0	3,321	60
US 24-40	650	1,252	176	0	2,070	38
US 50-81	0	100	16	16	132	2
Total	3,606	1,635	266	16	5,573	
Percent of total	65	27	4	2		100

/1 Includes 2,066 trucks from Saline County that may have traveled over U. S. Highways 81 and 40.

Source: Sample data.

Approximately 60 percent of the total volume of trucked-in receipts to the Salina sales pavilion moved in over U. S. 81. About 38 percent were moved in over U. S. 24 and 40, and U. S. 50 and 81 were used to bring in about 2 percent of the total volume of trucked-in receipts to the Salina market, Table 11.

The largest volume of trucked-in receipts at the Salina sales pavilion came from Saline County. Considerable volumes came from Ellsworth, Ottawa, and Dickinson counties, but outside of these

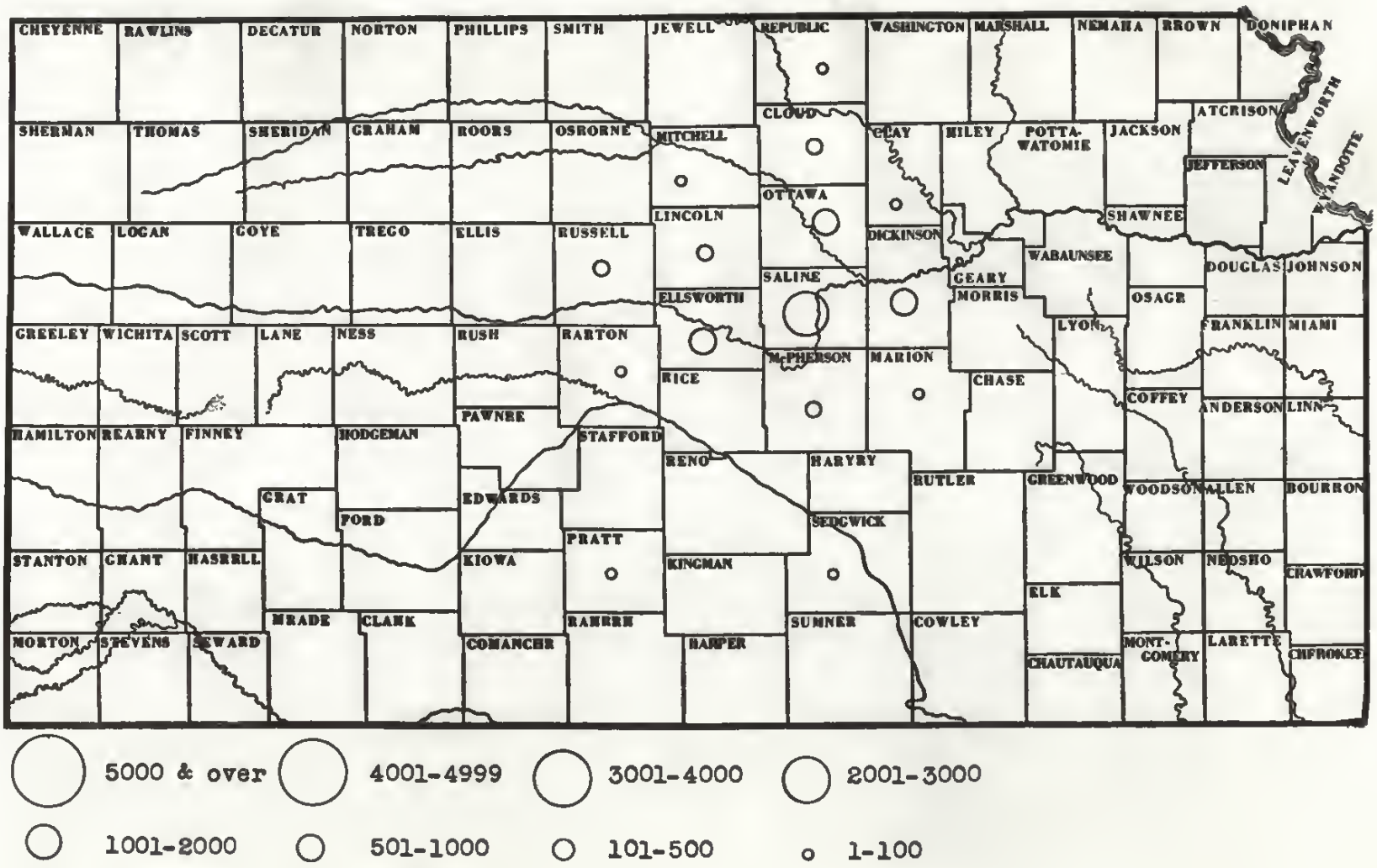

Fig. 5. Origin of trucked-in receipts at the Salina market, by number of trucks, 1947.

counties the volume of trucked-in receipts coming in to Salina was small, Fig. 5.

Dodge City. Sixty-nine percent of the total volume of trucked-in receipts at Dodge City came in from counties within 25 miles of the market. Twenty-six percent came from counties 25-50 miles away, 4 percent came from counties 50-100 miles away, and only .4 percent came from counties that were over 100 miles from the Dodge City sales pavilion, Table 12.

Approximately 60 percent of the trucked-in receipts to the Dodge City sales pavilion came in over U. S. 283. Twenty-one percent came in over U. S. 50 N and S, U. S. 54 was used to bring in 11.7 percent, 2.9 percent came in over U. S. 160, and .2 percent came in to Dodge City over U. S. 83 and K. 27, Table 12.

Table 12. A frequency distribution of the number and percent of trucks using the principal highways leading to the Dodge City sales pavilion and the number and percent of trucks originating from various distances from the market, 1947.

Highway	Number of miles traveled					Percent
	0-25	25-50	50-100	Over 100	Total	of total
US 283	5,708/1	806	13	0	6,527	60.0
US 50 NAS	1,741	422	179	13	2,355	21.5
US 54	0	1,216	0	24	1,271	11.7
K 45	0	333	25	0	358	3.3
US 160	0	64	217	13	294	2.9
US 83	0	0	13	0	13	.1
K 27	0	0	13	0	13	.1
Total	7,449	2,841	460	51	10,801	
Percent of total	69	26	4.2	0.4		100.0

/1 Includes 3,494 trucks from Ford County which may have traveled on U. S. Highways 50, 154, and 283.

Source: Sample data.

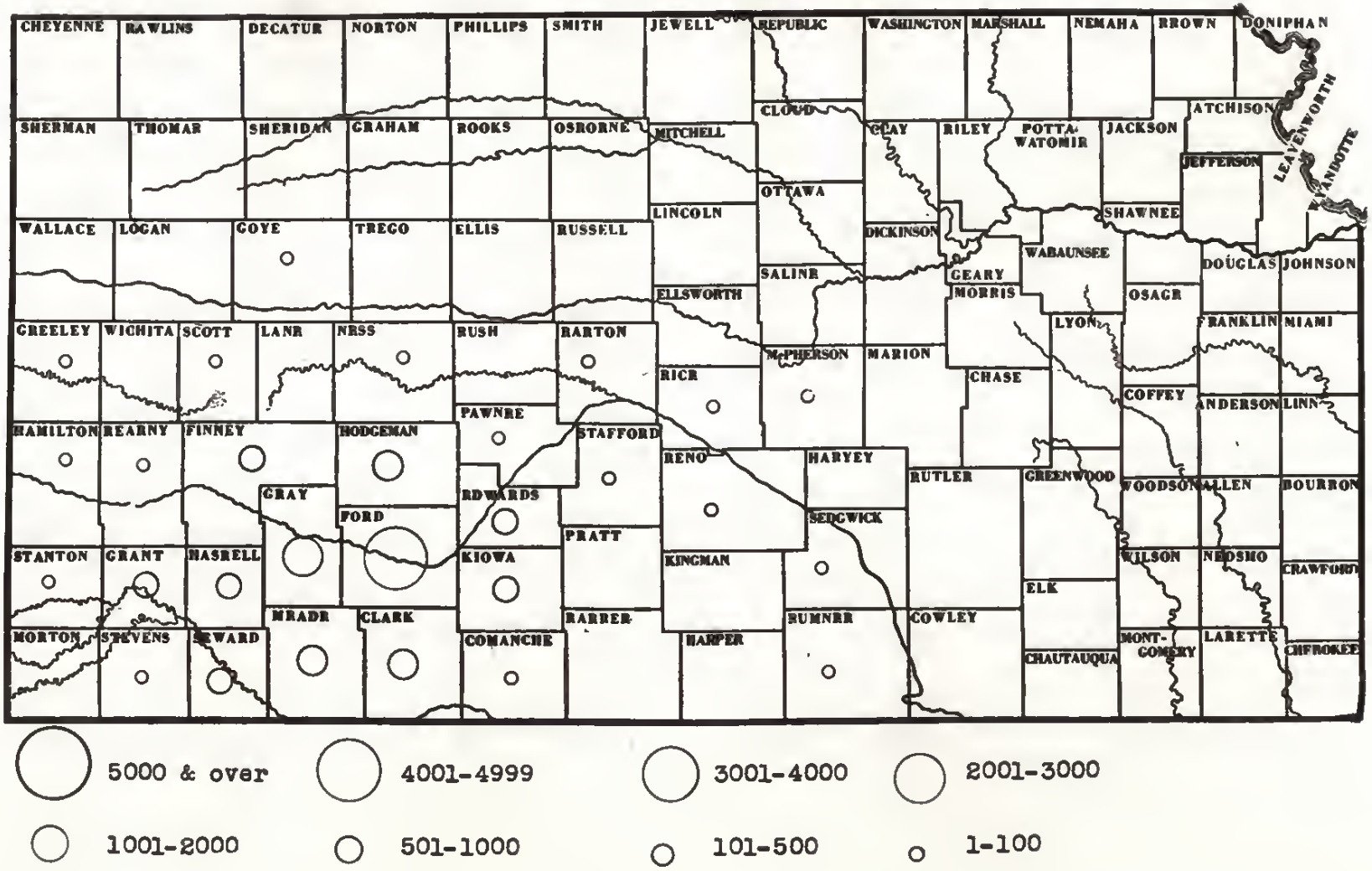

Fig. 6. Origin of trucked-in receipts at the Dodge City market, by number of trucks, 1947.

Figure 6 shows that the origin of trucked-in receipts coming into the Dodge City market was not so concentrated as the origin of receipts for the Parsons or Salina markets. Most of the volume came from Ford County and the counties that are immediately surrounding it; i. e., Gray, Meade, Clark, and Hodgeman counties. Trucked-in receipts came from as far north as Gove County and as far east as McPherson County.

Summary. By far the greatest percentage of the total receipts arriving by truck at any one market was at Parsons where 95 percent of the total receipts were trucked-in receipts; Wichita and Dodge City markets were next with 76 percent and 75 percent respectively of the total being trucked-in receipts; St. Joseph had 66 percent of its total as trucked-in receipts; Salina had 63 percent; and Kansas City had the lowest percentage of any of the markets studied, with only 38 percent of its total being trucked-in receipts, Table 13.

Table 13. Classification of total receipts by method of arrival.

Market	Percent arriving by		Total
	Truck	Rail	
Kansas City	38	62	100
St. Joseph	66	34	100
Wichita	76	24	100
Dodge City	75	25	100
Salina	63	37	100
Parsons	95	5	100

Source: Annual reports from the six markets.

In all of the six markets studied, most of the livestock

trucked-in to markets was from a radius of 0-50 miles away with the exception of Kansas City, where only 26 percent of the trucked-in receipts came from a radius of 0-50 miles away from the market. The origin of trucked-in receipts at the Parsons market seemed to be the most concentrated of any of the markets studied. Ninety-nine percent of its total trucked-in receipts came from a radius of 0-50 miles away from the market. The origin for the Kansas City receipts was the least concentrated of the markets studied. With the volume of trucked-in receipts spread out more, 26 percent came from a radius of 0-50 miles from the market, 49 percent from 50-100 miles, 20 percent from 100-150 miles, and 5 percent came from a radius of over 150 miles away from the market. The other markets had very little of their trucked-in receipts coming from a radius of over 100 miles, Table 14.

Table 14. Frequency distribution of percent of trucks originating from various distances from market, 1947.

Market	Miles from point of origin to market				Total
	0-50	50-100	100-150	Over 150	
Kansas City	26	49	20	5	100
St. Joseph	70	26	2	2	100
Wichita	82	14	3	1	100
Dodge City	95	4	1	-	100
Salina	94	6	-	-	100
Parsons	99	1	-	-	100

Source: Sample data.

The Salina market was the only market studied that had 100 percent of its trucked-in receipts coming from Kansas. This might be expected since Salina is located in the center of the state.

The markets at Dodge City, Parsons, and Wichita each had a large percentage of their trucked-in receipts coming from Kansas, but the markets at Kansas City and St. Joseph had most of their trucked-in receipts coming from other states. This might be expected since both of these markets lie in other states, Table 15.

Table 15. Number of trucks from Kansas arriving at each market, 1947.

Market	Number from		Percent from	
	Kansas	Other states	Kansas	Other states
Salina	6,527	0	100	0
Dodge City	10,801	109	99	1
Parsons	29,640	333	92	8
Wichita	64,375	707	91.3	8.7
Kansas City	46,972	1,266	37.4	62.6
St. Joseph	27,907	900	31.9	68.1

Source: Sample data.

The Kansas City market appeared to draw trucks from the longest distances, with an average of 84 miles. Wichita was next, drawing trucks a little less than half as far as did the Kansas City market or an average of 41 miles per trip. Trucks coming to St. Joseph had an average of 33 miles while both Dodge City and Salina each drew trucks from an average of 22 miles. The Parsons market drew trucked-in receipts from the shortest distances of any of the six markets studied. It drew trucks from an average of only 19 miles, Table 16.

Figure 7 shows the trade territories for each of the six markets studied. It seems that the Kansas City market had the largest territory of any of the six and that Wichita was second,

St. Joseph was third, Dodge City and Salina were about the same, and that Parsons had the smallest.

Table 16. Average number of miles traveled one way to each of the six markets studied, 1947.

Market	Miles one way to market
Kansas City	84
Wichita	41
St. Joseph	33
Dodge City	22
Salina	22
Parsons	19
Av. for six markets	39

Source: Sample data.

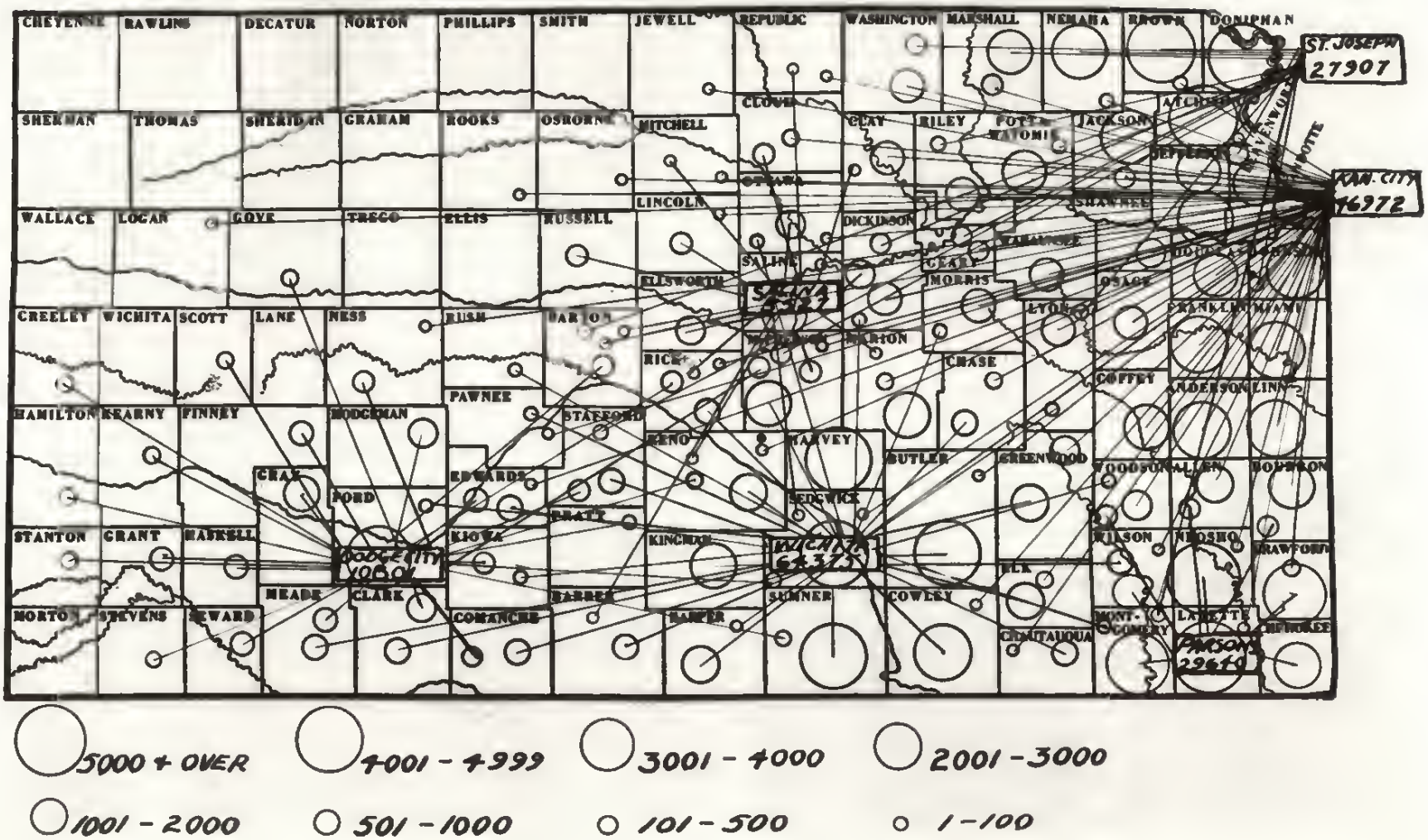

Fig. 7. Composite map of origin of trucked-in receipts at six markets, by number of trucks, 1947, showing trade territories for each market.

FARM TO MARKET USE OF KANSAS ROADS

To supplement this information, mail questionnaires were sent to a representative sample of 791 farmers and stockmen in various parts of the state to determine the use farmers made of roads and highways in marketing livestock. Replies were received from 167 informants. Farmers and stockmen to whom mail questionnaires were sent were asked to report for the calendar year 1947 the number of each species of livestock marketed, the distance to market for each species, the mileage of unimproved dirt road, gravel road, and hard surfaced road from the farm to the market usually used for each species, and the estimated number of trips in marketing each species.

Returns from mail questionnaires were not sufficiently numerous in all types of farming areas, so certain areas were combined as follows, Appendix:

Type of farming area	Area designation used in this study
1 and 2	A
3 and 4	B
5	C
6a and 6b	D
8	E
7 and 9	F
10a, 10b, 11, and 12	G

Number of farms by area used in this study to inflate averages to totals for each area from the 1945 census are as follows:

Area	Number of farms
A	29,138
B	26,940
C	17,672
D	26,974

E	13,008
F	15,342
G	18,176
State	141,192

Summary of Data. In moving livestock from farm to market by truck, farmers may travel over any or all three types of roads--unimproved dirt, gravel, or hard surfaced road. According to 167 replies to mail questionnaires, Kansas farmers traveled an average of 2.9 miles on unimproved dirt roads to market hogs, 1.8 miles to market sheep and lambs, and 4.3 miles to market cattle. The state average for all species was 3.0 miles per round trip on unimproved dirt roads for marketing livestock, Table 17.

Table 17. Average number of miles traveled on unimproved dirt roads per marketing trip for each species of livestock in Kansas, 1947.

Species	Average number of miles per farm in Kansas on unimproved dirt roads by species	Average number of trips per farm in Kansas on unimproved dirt roads by species	Average number of miles per trip in Kansas on unimproved dirt roads by species
Cattle	8.7	2	4.3
Hogs	2.9	1	2.9
Sheep and lambs	.9	0.5	1.8
All species	12.5	3.5	3.71

Source: Sample data.

The average number of miles traveled on gravel roads per round trip was 9.2 miles to market cattle, 11.8 miles to market hogs, and 4.4 miles to market sheep and lambs. The average was

8.17 miles for all species, Table 18.

Table 18. Average number of miles on gravel roads per marketing trip for each species of livestock for Kansas, 1947.

Species	Average number of miles per farm in Kansas on gravel roads by species	Average number of trips per farm in Kansas on gravel roads by species	Average number of miles per trip in Kansas on gravel roads by species
Cattle	18.3	2	9.2
Hogs	11.8	1	11.8
Sheep and lambs	2.2	0.5	4.4
All species	32.3	3.5	9.22

Source: Sample data.

Table 19. Average number of miles traveled on hard surfaced roads per marketing trip for each species of livestock for Kansas, 1947.

Species	Average number of miles per farm in Kansas on hard surfaced roads by species	Average number of trips per farm in Kansas on hard surfaced roads by species	Average number of miles per trip in Kansas on hard surfaced roads by species
Cattle	70	2	35.0
Hogs	32.2	1	32.2
Sheep and lambs	18.2	0.5	36.4
All species	120.4	3.5	34.4

Source: Sample data.

On hard surfaced roads the average number of miles per round trip was 35.0 miles to market cattle, 32.2 miles for marketing hogs, and 36.4 miles for marketing sheep and lambs. The state average for all species per marketing trip on hard surfaced roads was 34.5 miles, Table 19.

Table 20. Average number of miles traveled on all types of roads per marketing trip for each species of livestock for Kansas, 1947.

Species	Average number of miles on all types of roads per farm in Kansas by species	Average number of marketing trips per farm in Kansas on all types of roads by species	Average number of miles per trip in Kansas on all types of roads by species
Cattle	96.7	2	48.4
Hogs	46.9	1	46.9
Sheep and lambs	22.1	0.5	44.2
All species	165.7	3.5	47.2

Source: Sample data.

The weighted average number of miles traveled per round trip by Kansas farmers on all types of roads in marketing cattle was 48.4 miles. For hogs, it was 46.9 miles, and for sheep and lambs, it was 44.2 miles. The state average for all species was 46.8 miles traveled per trip in marketing Kansas livestock, Table 20.

Cattle led in the number of trips to market, with hogs second and sheep and lambs requiring the fewest number of trips to market. Area F led in the number of trips required to market cattle and

ranked second in total number of trips traveled in marketing all species. Area D ranked second in number of trips traveled to market cattle and first in total number of trips required to market all species. Area G ranked third in both number of trips required to market cattle and in the total number of trips required to market all species. Areas A, B, and E required relatively few trips to market cattle and to market all species of livestock, Table 21.

Table 21. Total number of trips per farm by area and by species of livestock in Kansas, 1947.

Area	Cattle	Horse	Sheep and lambs	Total
A	1.70	.75	.46	2.92
B	.41	.16	.50	1.08
C	1.35	1.95	---	3.30
D	2.13	2.00	.10	4.23
E	1.20	1.40	---	2.60
F	4.27	.81	.22	5.31
G	2.88	.74	.23	3.85

Source: Sample data.

The average miles traveled on unimproved dirt road per farm in Kansas in marketing livestock was 12.5 miles; on gravel, 32.2 miles; and on hard surfaced roads, 120.4 miles. Area G led in total miles traveled per farm with 305.3 miles; Area F was next with 225.1 miles. Areas G, D, and A were fairly close with 195 miles, 186 miles and 137 miles respectively. Area B was next with 73 miles, and Area E was last with 56 miles traveled per farm, Table 22.

Table 22. Average miles per farm by areas for each type of road for all species, 1947.

Area	Unimproved dirt	Gravel	Hard surfaced	Total
A	3.3	45.3	88.8	137.4
B	.7	12.6	60.2	73.5
C	5.8	37.7	261.8	305.3
D	10.9	31.3	144.6	186.8
E	6.7	24.6	24.8	56.1
F	36.6	45.9	142.6	225.1
G	33.5	23.7	128.5	195.7
Av. state	12.5	32.2	120.4	165.1

Source: Sample data.

One factor affecting miles traveled by area is the size of the area. Since no attempt was made to make the areas of equal size, the totals are not significant except as they contribute to a state total. More miles were traveled in marketing cattle than either of the other species of livestock. In fact, more miles were traveled in marketing cattle than for both hogs and sheep and lambs together.

Areas C, D, and A were the areas in which the total miles traveled for marketing livestock was greatest, with Areas F and G ranking next in importance, and Area E being the most insignificant of the areas as far as miles traveled in marketing livestock was concerned, Table 23.

The number of ton miles of truck transportation of livestock was calculated by areas and for Kansas. A ton mile is the equivalent of hauling a one-ton load one mile. Farmers reported the number of head of each species hauled in their trucks and the

Table 23. Total number of miles traveled by area and by state for each species of livestock marketed in Kansas, 1947.

Area	Cattle	Hogs	Sheep and lambs	Total
		(000 omitted)		
A	1,602,169	984,584	1,463,530	4,014,283
B	165,773	652,630	732,900	1,551,305
C	3,397,442	1,825,518	512,488	5,734,448
D	3,028,007	1,615,505	---	4,643,514
E	347,314	382,435	---	347,314
F	2,764,753	339,276	335,428	3,429,451
G	2,346,775	859,003	84,823	3,290,601
Total	13,652,235	6,622,951	3,119,169	23,394,355

Source: Sample data.

Table 24. Total ton miles hauled by farmers by area and by species of livestock for Kansas, 1947.

Area	Cattle	Hogs	Sheep and lambs	Total
A	1,398,900	490,985	1,502,142	3,392,027
B	62,820	94,230	109,935	266,985
C	4,412,698	652,097	---	5,064,795
D	1,961,117	610,428	462,790	3,034,335
E	247,302	248,453	---	496,255
F	2,972,729	133,652	71,238	2,789,709
G	2,981,851	236,293	26,928	3,236,072
Total	13,640,977	2,466,138	2,173,123	18,280,238

Source: Sample data.

distance to market. Number of head for each farm in the sample was converted to tons by assuming the following weights per head: cattle, 750 pounds; hogs, 240 pounds; and sheep and lambs, 90 pounds. The number of tons was multiplied by the number of miles to market to determine ton miles per farm. Ton miles per farm was expanded to total ton miles for each area and for the state, Table 24.

Area C led in total ton miles hauled in marketing Kansas livestock; Area A and D were close but ranked second and third respectively; Area F ranked fourth; and Areas E and B were fifth and sixth.

Cattle was by far the most important species in total ton miles hauled, with approximately 13.5 million ton miles being hauled. Hogs were second with 2.46 million ton miles, and sheep and lambs ranked third with 2.17 million ton miles being hauled, Table 24.

Figure 8 shows that Area C led in the total miles traveled per farm in marketing livestock. This area also had the largest number of miles traveled on hard surfaced roads of any of the areas. Area F ranked second in total number of miles traveled per farm in marketing livestock. Areas G, D, and A were all close but they ranked third, fourth, and fifth respectively. Area B was sixth and Area E was last in total miles traveled per farm in marketing livestock.

Area B had the highest percent of hard surfaced roads traveled in marketing their livestock with 84 percent being hard surfaced. Area E was last with only 48 percent of its roads

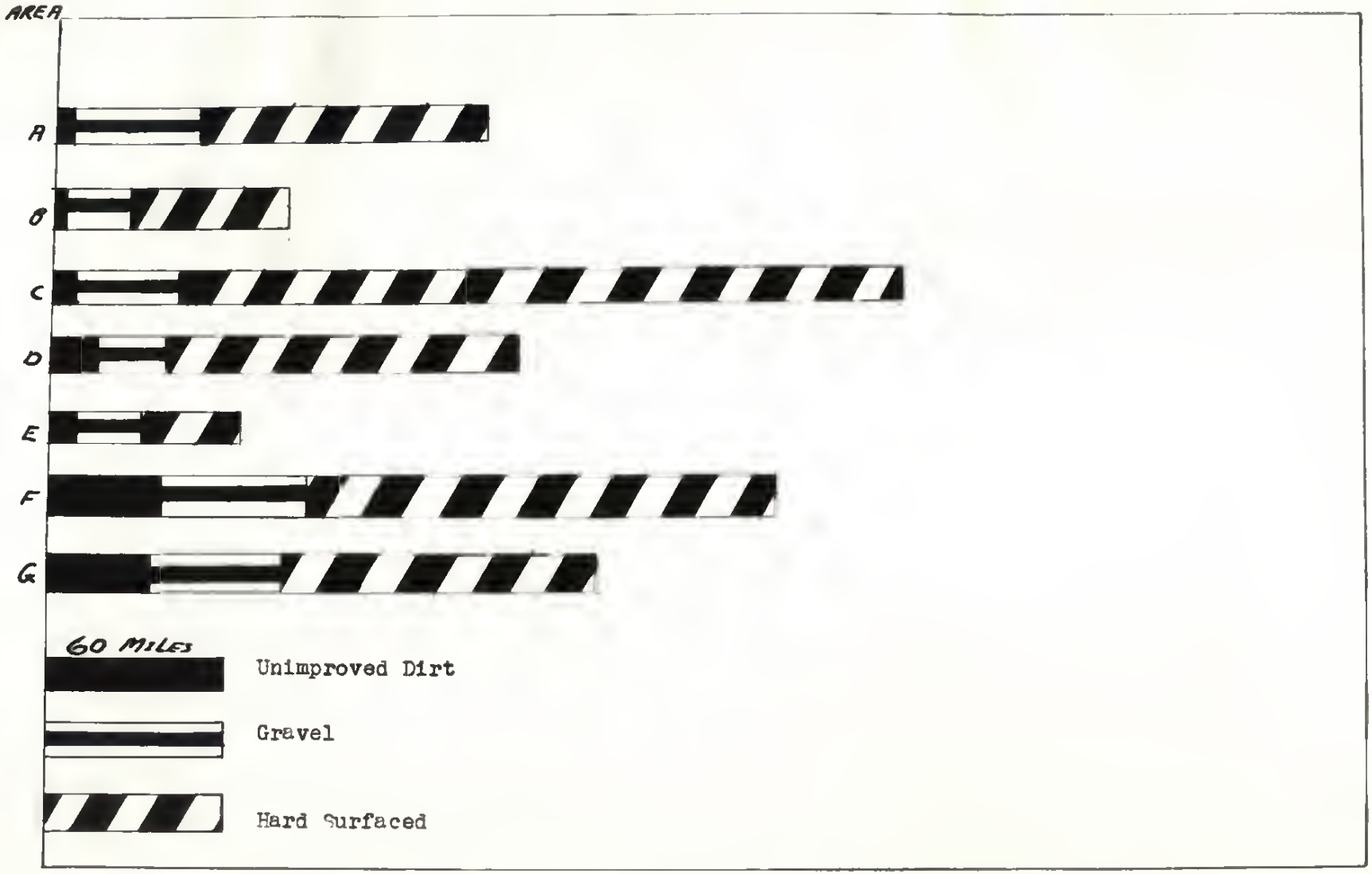

Fig 8. Total miles traveled per farm in marketing livestock by area and type of road, Kansas, 1947.

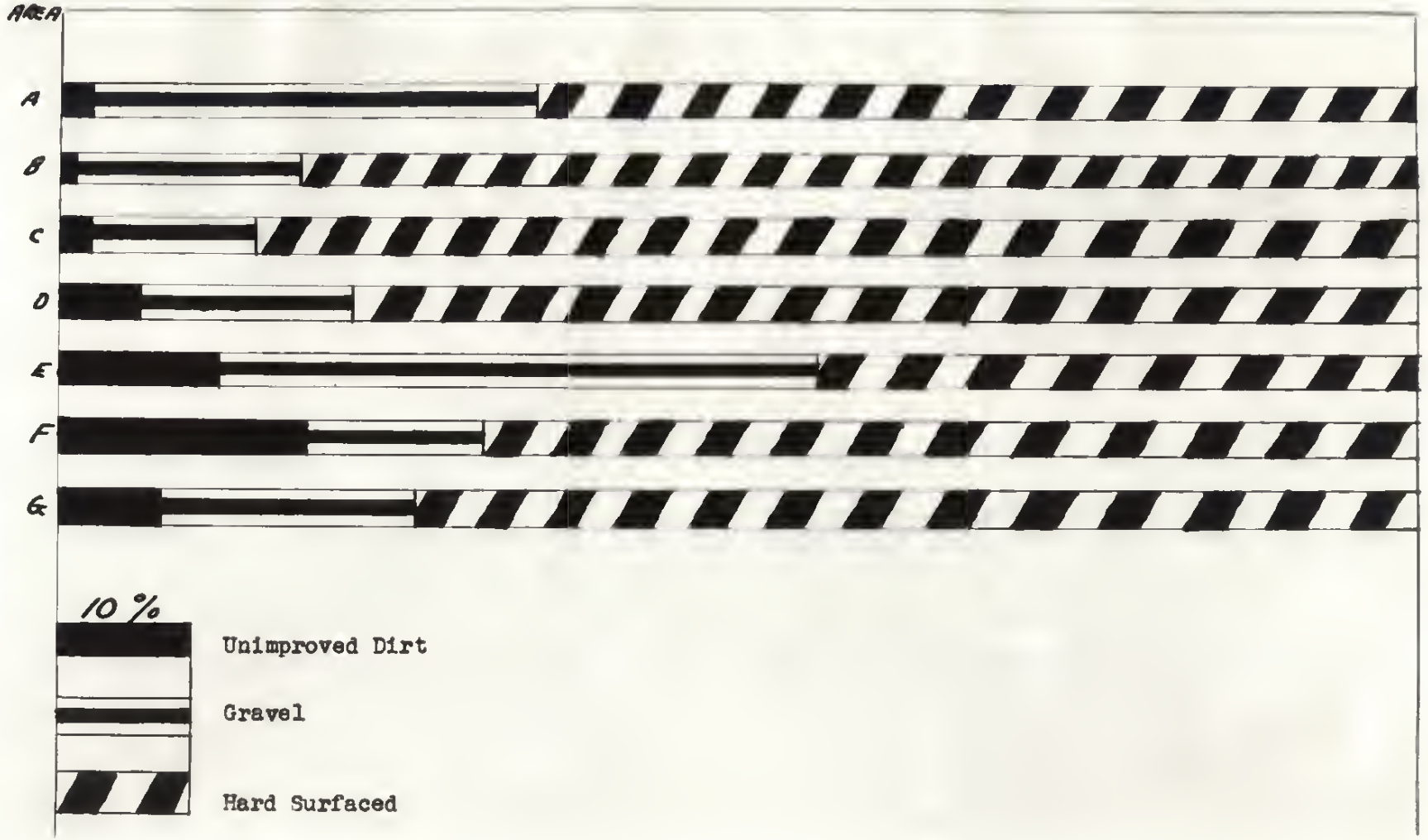

Fig.9. Percent of total miles by area traveled on each type of road in marketing livestock in Kansas, 1947.

traveled in marketing livestock being hard surfaced. Area E was first in number of miles traveled of gravel roads, having 38 percent of the farm to market roads traveled in marketing livestock being of this type. Area C had the fewest number of miles of gravel roads traveled, with only 16 percent. Area B had the smallest percent of its roads traveled in marketing livestock being unimproved dirt, with only 2 percent being of this type, while Area F had the most with 17.5 percent of their farm to market roads traveled in marketing livestock being of this type, Fig. 9.

SUMMARY AND CONCLUSIONS

The livestock enterprise is one of the most important agricultural enterprises in the state of Kansas. More income is derived from livestock than from any other farming enterprise with the possible exception of wheat. Efficient facilities for transportation of livestock from the farm to market are highly important to Kansas farmers and others.

The greater proportion of Kansas livestock is transported from the farm to the market by the use of trucks. Since this is true, if farmers are to have efficiency in marketing their livestock, they must have good roads. If the roads are poor, transportation delays may result in the farmers' receiving lower prices due to price fluctuations during the delay. Also, poor roads may result in farmers' receiving less for their livestock due to shrinkage and injury of the animal. With good roads, both of these losses can be minimized since faster, smoother trips to market may be realized.

Trucks going to the Kansas City market traveled further than did the trucks going to any other of the public markets studied. The trucks going to the Kansas City market traveled an average of 84 miles for each one way trip. The origin of trucked-in receipts for the Kansas City market was less concentrated than any of the other markets studied. The Kansas City market drew livestock from a larger area of the state than any of the other markets, but the largest volume of livestock came from areas within 100 miles of the market.

The origin of trucked-in receipts to the Wichita market, like the Kansas City market, were not highly concentrated. The greatest percentage of the trucked-in receipts came from counties that were within 50 miles of the market.

With the exception of the Salina sales pavilion and the Dodge City market, the remaining livestock markets studied had the origin of trucked-in receipts rather concentrated. The origin for the Parsons market seemed to be the most concentrated of the six markets studied with 99 percent of its total volume of trucked-in receipts coming from counties that were within 100 miles from the market.

The average miles traveled to all of the six markets studied was 39 miles for each one way trip to market. The averages to each market varied from 84 miles traveled to the Kansas City market to 19 miles for the Parsons market.

U. S. Highway 69 going into Kansas City was probably the highway bearing the heaviest traffic with 6,291 trucks traveling over it. U. S. 24-40 going into Kansas City was probably next most frequently used, having a total of 5,964 trucks traveling over it. U. S. Highway 283 going into Dodge City was probably the third most important highway having 5,708 trucks traveling over it.

Area E seems to have the largest percentage of unimproved dirt highways of any of the areas in the state, while Area C seems to have the largest percentage of improved hard surfaced roads. Besides having the smallest percent of hard surfaced roads in the state, Area E also had the fewest miles per farm

traveled in marketing livestock. Area C had the largest percentage of hard surfaced roads in the state and also was first in total number of miles per farm traveled in marketing livestock.

This study shows that in marketing livestock, 7.6 percent of the total miles traveled was on unimproved dirt roads, that 19.5 percent was on gravel roads, and that 72.9 percent was on hard surfaced roads. The farmers traveled a total of 1,763,720 miles on unimproved dirt roads in marketing their livestock, 4,584,420 miles on gravel roads, and 16,983,379 miles on hard surfaced roads, or a total of 23,295,519 miles in marketing livestock.

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APPENDIX

Type of Farming Areas

Area 1. General, livestock, cash-grain, self-sufficing, poultry, dairy. Corn and wheat are fairly well balanced, with oats of less importance. Corn is supplemented by grain sorghums. Hay and pasture occupy a large part of the area.

Area 2. General, livestock, dairy, cash-grain, poultry, self-sufficing. Dairy, especially whole milk production, is common. Corn is the predominant grain crop and is followed in importance by wheat and oats. Alfalfa is the chief hay crop. Potatoes, fruit, and truck are grown.

Area 3. General, livestock, poultry, dairy, cash-grain, self-sufficing. Dairying, especially whole milk production, is common. Corn is the predominant grain crop and is followed in importance by wheat and oats. Alfalfa is the chief hay crop. Potatoes, fruit, and truck are grown.

Area 4. Livestock, general, cash-grain. This area is in the Corn Belt. Corn and hogs are most important, with wheat and oats comparatively unimportant. Beef cattle, alfalfa, and poultry are important enterprises.

Area 5. Range livestock, general, cash-grain. This area includes the long-grass grazing region comprising chiefly the Blue Stem Belt. Corn and sorghums are the chief feed crops. Wheat is sometimes grown on the more level land. Cattle are shipped in for the grazing season. Some cow herds are kept and a small proportion of the steers are fed either on grass or later.

Area 6a. Cash-grain, livestock, general. Wheat production

is characteristic of this area. Corn and some grain sorghums are grown. Oats and alfalfa are important crops. Livestock are more important here than in the areas farther west.

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

Area 7. Cash-grain, livestock, general. Wheat is the prominent crop in this region. There is less corn and oats than in Area 6 but more pasture. Livestock and dairying are of less importance.

Area 8. Cash-grain, livestock, general. This area includes the western portion of the Corn Belt. Corn and hogs are important. Wheat is more important in the western part of the area.

Area 9. Cash-grain, some general farming. Wheat is the most important crop in this area, comprising on the average a larger percentage of the farm acreage than in any other area. Considerable corn and sorghums are produced. Livestock are less important than in Areas 6 and 7.

Area 10a. Cash-grain, some livestock, and general farming. Wheat occupies a large proportion of the crop area. Some corn, barley, and grain sorghums are grown.

Area 10b. Similar to 10a but more cash-grain and less livestock and general farming. There is more wheat and less pasture. Grain sorghums are of more importance and barley is of less importance.

Area 10c. Cash-grain, livestock, and some general farming. With less wheat and more pasture, livestock--especially range livestock--are more important than in either Area 10a or 10b.

The sorghums are the most important of the feed grains.

Area 11. Cash-grain, livestock, general. Wheat ranks first among the crops in this area, but corn and barley occupy important places in the farming systems. Pasture and beef cattle are important.

Area 12. Cash-grain, range livestock, some general farming. This is the short-grass grazing region. Although thousands of acres have been broken in the last 10 years, a large percent of the farming land is still in pasture. Wheat is the principal crop. Some barley, corn, and grain sorghums are grown, Fig. 10.

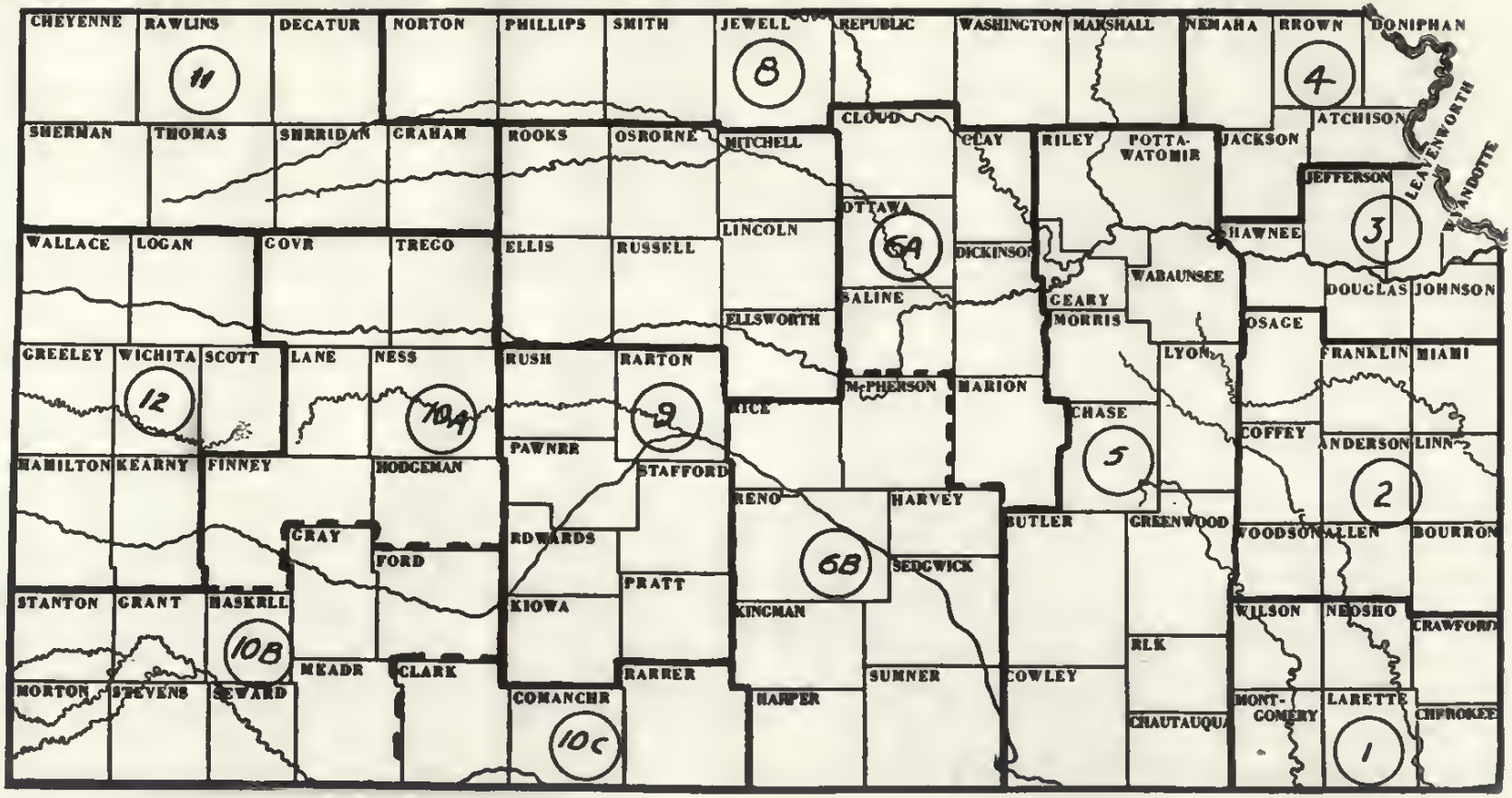

Fig. 10. Types of farming areas in Kansas.

Source: Bul 251, Types of Farming in Kansas, by J.A. Hodges, F.F. Elliot, and W.E. Grimes, 1930, p. 13, Fig. 13.