

October 1, 1996

Dear Horse Enthusiast:

Although Kansas included horses in the 1992 Kansas Census of Agriculture, this report is the first which directly measures the number of equine and equine operations in Kansas. More importantly, it establishes the importance of the equine industry to the Kansas economy.

The accomplishment of any task on the magnitude of the Kansas Equine Economic Impact Survey requires the efforts of many individuals. There are countless 4-H members, horse project leaders, and county extension agents who were the critical backbone for this project. The completion of the survey would not have been possible without their support and help.

There are always key individuals who are instrumental in the success of a project, and in this case, these would include members of the original "Equine Task Force" which include Patty Weelborg (Canton), Karen Tolle (Topeka), Carole James (Abilene), Larry Childs (), Kevin Hood (Westmoreland), Bud Newell (Lecompton), F.E. Bliss (Longton, Deceased), Paul Ryding (Wichita), Randel Raub (Kansas State University), and Mark Arns (Kansas State University). In addition to this original task force, contributions from the Kansas Department of Agriculture, Kansas Department's Division of Statistics, Kansas Racing Commission, and the Kansas Horse Council contributed to the successful completion of the survey.

On behalf of all those who were instrumental in bringing you this publication, we hope that you can use the information presented herein in the pursuit of your equine endeavors.

Sincerely,

Mark J. Arns, Ph.D.
Extension Specialist - Horses

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President, Kansas Horse Council

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SURVEY HIGHLIGHTS

Equine Population

Survey results indicated a total of 103,000 equine in Kansas as of January 1, 1996. All light horse breeds totaled a majority of the equine population with 92,600 reported. Race horse breeds made up about 7 percent of the light horse breed total, with 6,400 head. There were a total of 5,900 ponies and 3,000 donkeys and mules populations. Draft horse breeds accounted for the smallest category of general breeds, with 1,500 head.

Equine Value

An average value was computed per head from the data collected for each breed and aggregated to the total value for all equines. The total value of all equine as of January 1, 1996, was \$183 million. The value of light horse breeds-other than race breed horses-totaled \$161 million; race horse breeds, \$13.9 million; draft horse breeds, \$2.3 million; ponies, \$3.6 million; and donkeys and mules, \$2 million.

Equine Related Assets

Equine related assets totaled over \$1.03 billion dollars. The value of the land, fencing, and buildings composed 66 percent, or \$681 million, of the total assets. The survey indicated a total of 944,000 acres being devoted to equine purposes. The equine on hand accounted for \$183

Table 1. EQUINES BY TYPE, KANSAS, 1996

Type	1996
Total Light Horse Breeds	92,600
Race Horse Breeds	6,400
Other Light Horse Breeds	86,200
Draft Horse Breeds	1,500
Ponies	5,900
Donkeys/Mules	3,000
TOTAL EQUINES	103,000

million of the total assets; vehicles, equipment, and tack, \$156 million; and feed and supplies on hand, \$14.4 million. Survey findings showed that 15,200 horse trailers and/or horse vans are owned by Kansas equine operators.

Equine Expenditures

Survey respondents reported total expenditures of \$142.8 million during 1995. Feed expenses accounted for the largest percentage of the total operating expenditures, with \$35.3 million reported. Other leading operating expenses were: boarding and training fees, \$8.4 million; health, \$7.9 million; maintenance/repair, \$5.9 million; farrier, \$5.8 million; shipping and travel, \$4.8 million; fees and payments, \$3.9 million; and taxes, \$3.6 million. Additional expenditure categories are shown in table 13.

Capital expenditures of \$38.4 million made up about 28 percent of the total expenses. Equipment purchases totaled \$15.6 million; purchases of equines, \$14.2 million; and real estate purchases and improvements, \$8.5 million.

Labor expenses totaled over \$14 million. Cash labor expenses accounted for \$13.3 million or 94 percent of this total. The value of non-cash items accounted for the remainder, with \$889,000 reported. Not surprisingly, most equine operations were operated by unpaid family workers. Full-time unpaid family workers totaled 8,200 and part-time or seasonal unpaid family totaled 30,300.

Total operating and capital expenses per equine averaged about \$1,250. Total expenses including labor averaged about \$1,385 per equine.

Table 2. EQUINE SURVEY HIGHLIGHTS, KANSAS, 1996

Categories	Number	Average Per Equine ^{1/}	Total Value
		Dollars	1,000 Dollars
<u>Equines by Type</u>			
Racing Breed Horses	6,400	2,175	13,934
Other Light Horses	86,200	1,870	161,054
Draft Horses	1,500	1,535	2,299
Ponies	5,900	620	3,650
Donkeys/Mules	3,000	695	2,082
Total All Equine	103,000	1,775	183,019
<u>Equine Operations by Type</u>			
Commercial Boarding/Training	965		
Commercial Breeding	759		
Crop/Livestock Farms	14,842		
Non-Farm Residences	9,507		
Other	1,927		
Total Equine Operations	28,000		
Acres Used for Equine	944,000		
<u>Asset Values, January 1, 1996</u>			
Equines on Hand		1,775	183,019
Land, Fences, and Buildings		6,610	680,759
Vehicles, Equipment, and Tack		1,520	156,464
Equine Feed and Supplies		140	14,417
Total Equine Related Assets		10,045	1,034,659
Horse Trailers and Vans	15,200		
<u>Expenditures During 1995</u>			
Equines Purchased			14,208
Real Estate and Improvements			8,514
Equipment Purchases			15,644
Total Capital Expenditures			38,366
Total Operating Expenditures		880	90,242
Total Hired Labor Expenditures		140	14,148
Total Expenditures		1,385	142,756
<u>Total Workers</u>			
Full-Time Workers	1,060		
Part-Time Workers	1,280		
Total Hired Workers	2,340		
Cash Labor Expenditures			13,259
Value of Non-Cash Items Provided to Workers			889
Total Hired Labor Expenditures			14,148
Workers for Whom Housing was Provided	507		

^{1/} Based on total equine on hand January 1, 1996.

Table 3. EQUINES BY TYPE AND DISTRICT, KANSAS 1996

Districts	Total Equines	Light Horses <u>1/</u>	Draft Horses	Ponies	Donkeys & Mules
----- Number -----					
Northwest	3,070	2,960	40	30	40
West Central	4,530	3,580	30	840	80
Southwest	9,770	9,510	30	130	100
North Central	6,750	6,190	190	200	170
Central	9,650	8,800	170	500	180
South Central	19,320	17,130	150	1,630	410
Northeast	11,740	10,040	120	560	1,020
East Central	21,760	18,750	720	1,440	850
Southeast	16,410	15,640	50	570	150
STATE	103,000	92,600	1,500	5,900	3,000

1/ Includes racing breeds.

Equine by District

(See map showing district boundaries on page 21)

Survey results indicated the east central district accounted for the largest percentage of the total 103,000 equine population, with 21,760. The south central was second, with 19,320; the southeast followed, with 16,410; and the northeast, with 11,740. Of the 92,600 reported total light horse breeds the same districts lead with the east central district having 18,750; south central, 17,130; southeast, 15,640; and the northeast, 10,040. The southeast, with 2,210, and the east central, with 1,460 equine, were the two leading districts for race horse breeds.

Respondents indicated the south central district, with 1,630 ponies, accounted for

28 percent of the total 5,900 pony population. The east central district was second, with 1,440; the west central district third, with 840; the southeast district fourth, with 570; and the northeast district a close fifth, with 560.

Draft horse breeds made up the smallest percentage (1.4 percent) of the total number of equine, with 1,500 reported. The east central district had the most, with 720; the north central district followed, with 190; and the central district was third, with 170.

Equine by Breed

The American Quarter Horse, with 58,900, accounted for 57 percent of the total Kansas equine population. Pintos and Paints came next, with 7,050 reported. Arabians followed very closely, with 6,000. As

shown in table 4, the survey indicated a total of 5,900 ponies, with a majority of these (4,850 or 82 percent) being breeds other than Pony of Americas. Belgians accounted for 900 (60 percent) of the total draft horse breeds, followed by Clydesdales, with 350.

Average Values per Breed

When an average value per head for each breed was computed, Warmbloods had the highest value per head, at \$5,900, and Thoroughbreds followed with an average value of \$3,030 per head. Morgans ranked third, with an average value of \$2,840 each, and Arabians ranked fourth, at 2,690 each. The American Quarter Horse averaged \$1,960 per head and accounted for 63 percent of the total equine value.

Table 4. EQUINE INVENTORY AND VALUE BY BREED, KANSAS, 1996

Breed	Total Equines	Total Value	Average Value
	Number	1,000 Dollars	Dollars
Light Horse Breeds	86,200	161,054	
American Quarter Horse	58,900	115,467	1,960
American Saddlebred	700	906	1,290
Appaloosa	3,650	4,143	1,140
Arabian	6,000	16,160	2,690
Half Arabian	650	968	1,490
Morgan	450	1,277	2,840
Palomino	1,200	1,055	880
Pinto or Paint	7,050	11,538	1,640
Warmbloods	200	1,181	5,900
Crossbred or Unknown	3,050	2,739	900
Other	4,350	5,620	1,290
Race Horse Breeds	6,400	13,934	
Standardbred	2,700	2,725	1,010
Thoroughbred	3,700	11,209	3,030
Draft Horse Breeds	1,500	2,299	
Belgian	900	1,141	1,270
Percheron	150	348	2,320
Clydesdale	350	570	1,630
Other	100	241	2,410
Ponies	5,900	3,650	
American	1,050	1,754	1,670
Other	4,850	1,896	390
Donkeys and Mules	3,000	2,082	695
TOTAL EQUINES	103,000	183,019	1,775

Equine by Primary Use

Respondents were asked to specify the primary use of each equine. A list of the choices given to respondents can be found in table 6. Only one use was recorded for each equine. Thirty-five percent, or 36,300, of all Kansas equines were kept for pleasure use. The southeast district led all other districts in this use, with 6,630 equine. The south central and northeast districts followed, with 6,490 and 5,230, respectively.

Indications show a total of 25,000 equines were used primarily for working. The biggest surprise of this category was the large number of Standardbreds used for this purpose (2,090 of the total 2,700 reported). The East Central district accounted for 7,210 working equines; the Southeast district, 4,020; and the South Central district, 3,930.

There were 16,820 equines found being primarily used for breeding purposes. Brood mares accounted for 82.8 percent of this total, with 13,920, and Stallions accounted for the remainder of the equine used for this purpose, with 2,900. The east central district had the highest number of breeding equine, with 3,450. The southeast district came next, with 2,720; the south central, 2,660; and the northeast, 2,420.

Sixty percent of the 9,750 equine used primarily for competition or sport were American Quarter Horses. The east central district again had the most equine used for this purpose, with 3,010, followed by the south central district, with 2,440.

Foals of 1995 totaled 5,020. Foals of 1994 totaled 2,840. All equine indicated for "other" uses, including retired equine, totaled 5,140.

Thoroughbreds accounted for 53 percent of all equine used primarily for racing. The American Quarter Horse followed with 36 percent or 770. The east central district led in this category, with 670, and the southeast district came next, with 470.

Table 5. EQUINES BY PRIMARY USE AND DISTRICT, KANSAS 1996

Districts	Total Equines	Breeding	Competition or Sport	Racing	Pleasure	Working	All Other
----- Number -----							
Northwest	3,070	500	310	-	1,060	800	400
West Central	4,530	1,430	300	10	1,140	1,350	300
Southwest	9,770	1,510	790	290	3,270	2,610	1,300
North Central	6,750	750	430	10	3,370	1,690	500
Central	9,650	1,380	690	50	4,590	1,840	1,100
South Central	19,300	2,660	2,440	400	6,490	3,930	3,400
Northeast	11,740	2,420	810	230	5,230	1,550	1,500
East Central	221,760	3,450	3,010	670	4,520	7,210	2,900
Southeast	16,410	2,720	970	470	6,630	4,020	1,600
STATE	103,000	16,820	9,750	2,130	36,300	25,000	13,000

Table 6. EQUINES BY PRIMARY USE AND BREED, KANSAS, 1996

Breed	Total Equines	Primary Use of Inventory								
		Breeding		Foals		Competition	Pleasure	Working	Other	Racing
		Brood Mares	Stallions	1994	1995					
<u>Number</u>										
Light Horse Breeds . . .	86,200									
American Quarter Horse	58,900	7,800	1,420	1,790	2,990	5,860	19,070	18,100	1,100	770
American Saddlebred . . .	700	330	<u>1/</u>	<u>1/</u>	<u>1/</u>	90	110	60	110	<u>1/</u>
Appaloosa	3,650	710	110	110	160	510	1,300	420	290	40
Arabian	6,000	410	130	60	190	990	3,960	50	190	20
Half Arabian	650	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	120	350	70	110	<u>1/</u>
Morgan	450	100	30	30	30	40	180	20	20	
Palomino	1,200	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	760	200	240	<u>1/</u>
Pinto or Paint	7,050	1,740	460	290	920	570	1,820	560	650	40
Warmbloods	200	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	80	<u>1/</u>	<u>1/</u>	120	<u>1/</u>
Crossbred or Unknown	3,050	140	40	20	70	310	1,500	810	160	
Other	4,350	400	90	80	110	180	1,960	600	830	100
Race Horse Breeds . .	6,400									
Standardbred	2,700	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	540	2,090	70	<u>1/</u>
Thoroughbred	3,700	910	150	200	190	550	440	20	110	1,130
Draft Horse Breeds . .	1,500	120	40	30	50	50	110	1,030	70	
Belgian	900	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>
Percheron	150	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>
Clydesdale	350	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>
Other	100	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>
Ponies	5,900									
American	1,050	170	30	20	80	220	350	140	40	
Other	4,850	900	320	150	110	110	2,230	90	940	
Donkeys and Mules	3,000	90	60	10	40	60	1,550	690	500	
TOTAL EQUINES	103,000	13,920	2,900	2,840	5,020	9,750	36,300	25,000	5,140	2,130

1/ Included in Other Use of Inventory. 2/ Breakouts shown only for all draft horses.

Table 7. LIGHT HORSES BY BREED AND DISTRICT, KANSAS 1996

Districts	All Light Breeds ^{1/}	Racing Breeds		All Other Light Breeds					
		Standard-Bred	Thoroughbred	American Quarter Horse	Pinto & Paint	Arabian	Appaloosa	Crossbred & Unknown	Other Breeds
----- Number -----									
Northwest	2,960	20	40	2,340	110	40	50	240	120
West Central	3,580		110	2,730	140	120	210	150	120
Southwest	9,510	40	590	7,280	530	50	110	210	700
North Central	6,190	10	10	5,050	430	200	80	160	250
Central	8,800		170	6,660	480	160	870	150	310
South Central	17,130	230	520	7,320	1,590	3,990	510	650	2,320
Northeast	10,040	630	360	6,180	440	150	890	370	1,020
East Central	18,750	130	1,330	11,870	1,760	880	400	520	1,860
Southeast	15,640	1,640	570	9,470	1,570	410	530	600	850
STATE	92,600	2,700	3,700	58,900	7,050	6,000	3,650	3,050	7,550

^{1/} Includes racing breeds.

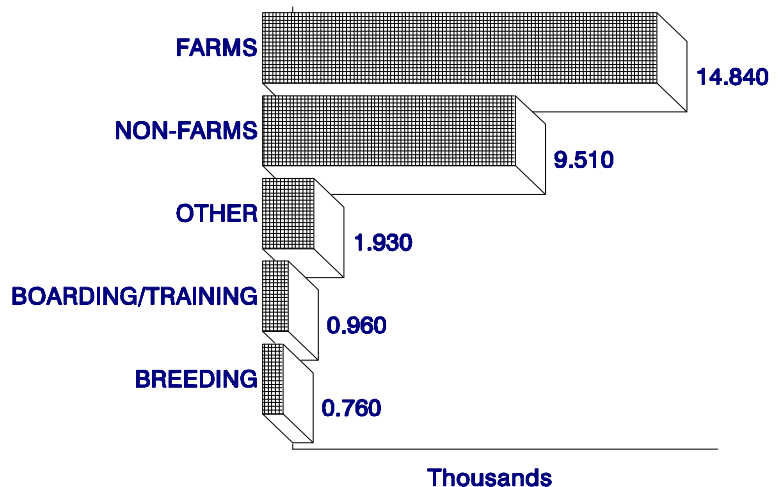
Table 8. EQUINE OPERATIONS BY TYPE AND DISTRICT, KANSAS 1996

Districts	Total	Primary Type				
		Commercial Breeding Farm	Crop, Livestock Farm	Non-Farm Residence	Commercial Boarding & Training	Other
----- Number -----						
Northwest	1,195	6	866	296	23	4
West Central	1,706	172	706	743	22	63
Southwest	1,653	74	914	456	48	161
North Central	1,489	12	1,147	176	16	138
Central	2,059	30	1,382	440	90	117
South Central	6,753	129	2,500	3,426	312	386
Northeast	3,797	62	2,285	1,060	138	252
East Central	5,097	148	2,844	1,489	182	434
Southeast	4,251	127	2,196	1,424	129	375
STATE	28,000	760	14,840	9,510	960	1,930

EQUINE OPERATIONS BY TYPE

Survey indications showed 28,000 equine places in Kansas. Respondents were asked to indicate which activity best described their operation as a whole. Over half (53 percent) indicated their operations were primarily crop or livestock farms. The second most indicated places were non-farm residences. All "other" places came next, with 1,930 reported; commercial boarding and training followed, with 960; and commercial breeding, with 760.

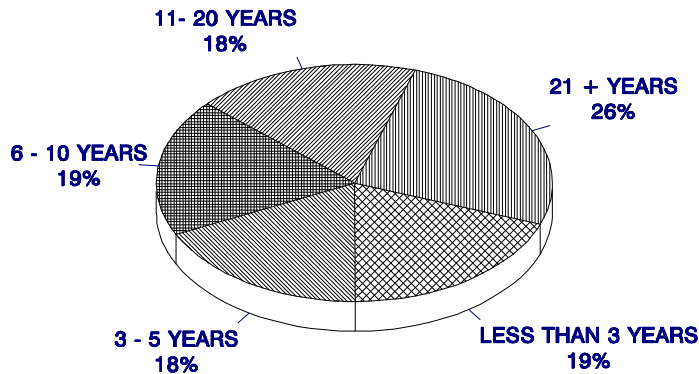
EQUINE OPERATIONS BY TYPE



**Table 9. EQUINE OPERATION BY LENGTH OF TIME
IN EQUINE-RELATED USAGE, KANSAS, 1995**

Districts	Total Operations	Less Than 3 Years	3-5 Years	6-10 Years	11-20 Years	21 Years +
----- Number -----						
Northwest	1,195	250	128	193	294	330
West Central	1,706	404	357	321	203	421
Southwest	1,653	329	241	344	222	517
North Central	1,489	132	204	226	264	663
Central	2,059	317	249	393	412	688
South Central	6,753	2,032	1,574	1,168	730	1,249
Northeast	3,797	573	938	592	786	908
East Central	5,097	739	836	1,020	1,140	1,362
Southeast	4,251	654	513	973	1,049	1,062
STATE	28,000	5,430	5,040	5,230	5,100	7,200

YEARS IN EQUINE BUSINESS



EQUINE OPERATIONS

As shown in table 9, the largest percentage of these equine operations (7,200) have been operating for over 21 years. The number of newer operations has grown steadily with operations that have had equine eleven to twenty years, at 5,100; six to ten years, 5,230; three to five years, 5,040; and those with equine on their operation less than three years, 5,430. The south central district showed the highest proportion of newer operations, while the east central and southeast districts showed the highest proportion of older equine operations.

**Table 10. ACREAGE IN EQUINE-RELATED USAGE AND VALUE
BY DISTRICT, KANSAS 1996**

Districts	Total Acres Operated	Acres Devoted to Equines	Total Value of Equine-Related Land, Fencing, and Buildings	Average Value per Equine Acre
	----- Acres -----		1,000 Dollars	Dollars
Northwest	1,303,000	96,200	24,294	253
West Central	1,047,800	42,100	23,729	564
Southwest	2,001,800	120,800	55,793	462
North Central	1,275,400	45,800	24,927	544
Central	1,467,000	71,900	53,962	751
South Central	2,081,000	130,100	153,066	1,177
Northeast	675,600	53,600	63,942	1,193
East Central	2,141,100	272,500	198,388	728
Southeast	2,035,300	11,019,000	82,657	745
STATE	14,028,000	944,000	680,759	721

**Table 11. VALUE OF EQUINE-RELATED ASSETS, BY DISTRICT
KANSAS, JANUARY 1, 1995**

Districts	Total Equine Related Assets	Value by Category			
		Equines on Hand	Equine-Related Land, Fencing and Buildings	Vehicles, Equipment, and Tack	Equine Feed and Supplies on Hand
----- 1,000 Dollars -----					
Northwest	40,957	10,302	24,294	5,673	687
West Central	37,313	6,830	23,729	6,119	634
Southwest	82,139	14,494	55,793	10,537	1,315
North Central	40,283	6,489	24,927	7,793	1,074
Central	78,475	10,763	53,963	12,728	1,021
South Central	232,700	41,340	153,066	35,862	2,432
Northeast	98,538	16,821	63,942	16,187	1,587
East Central	295,536	51,441	198,388	41,505	4,201
Southeast	128,719	24,537	82,657	20,058	1,466
STATE	1,034,659	183,019	680,759	156,464	14,417

EQUINE RELATED ASSETS

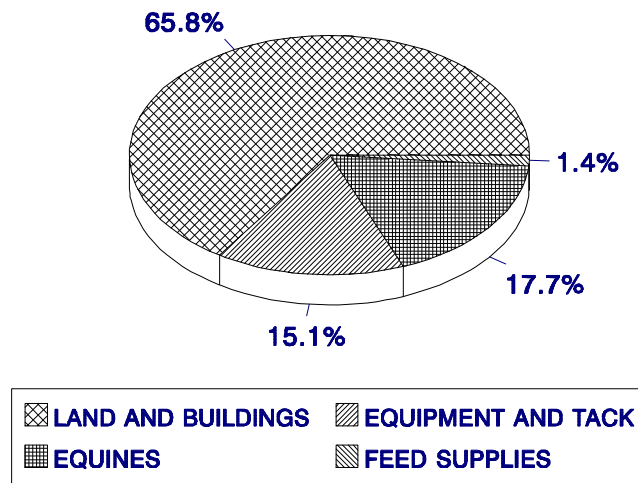


Table 12. EQUINE-RELATED LABOR, KANSAS, 1995

Category	Full Time (150 Days or More)	Part Time and/or Seasonal (Less than 150 Days)	Total
Number of Workers			
<u>Type of Worker</u>			
Manager, Assistant Manager	77	35	112
Trainer, Assistant Trainer	128	256	384
Groom, Exercise Rider, Etc.	85	126	211
General Farm Worker	800	863	1,633
TOTAL HIRED WORKERS	1,060	1,280	2,340
Workers for Whom Housing Was Provided			507
Unpaid Family Workers	8,200	30,300	38,500
			1,000 Dollars
<u>Expenditures for Hired Labor During 1995</u>			
Cash Labor Expenditures			13,259
Value of Non-Cash Items Provided to Workers			889
Total Labor Expenditures			14,148

Equine-Related Labor

There were 2,340 equine-related positions for which people were hired during 1995 in Kansas. Fifty-five percent, or 1,280, of the total hired workers were considered part-time workers. A part-time or seasonal worker was defined as a person working less than 150 days in 1995. If a hired worker performed multiple duties, the person was counted only in the category for which the most important service to the operator was provided.

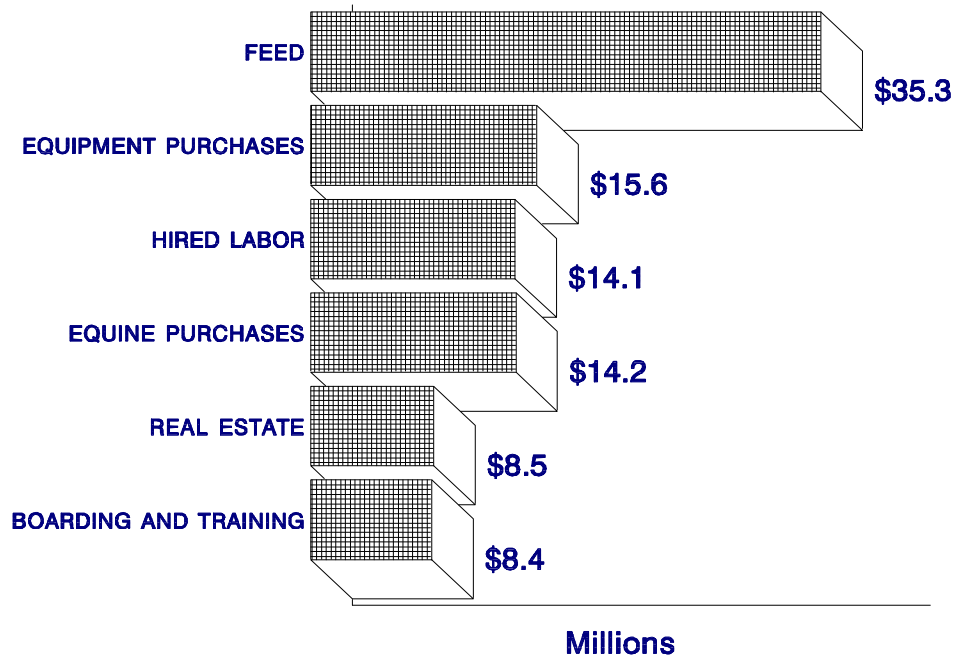
Cash labor expenditures of \$13.3 million, or \$18,800 per operation reporting cash labor expenses, included cash wages as well as the employer's cost of social security tax, workman's compensation, insurance, pensions, and unemployment compensation. The estimated value of non-cash items provided to workers during 1995 totaled \$889,000, or \$6,970 per operation providing non-cash items. These non-cash items included such things as housing, meals, clothing, horse board, lessons, and other benefits. A total of 507 workers were provided housing.

Unpaid family workers accounted for a majority of labor used on operations. Full-time family workers totaled 8,200 and part-time family workers totaled 30,300.

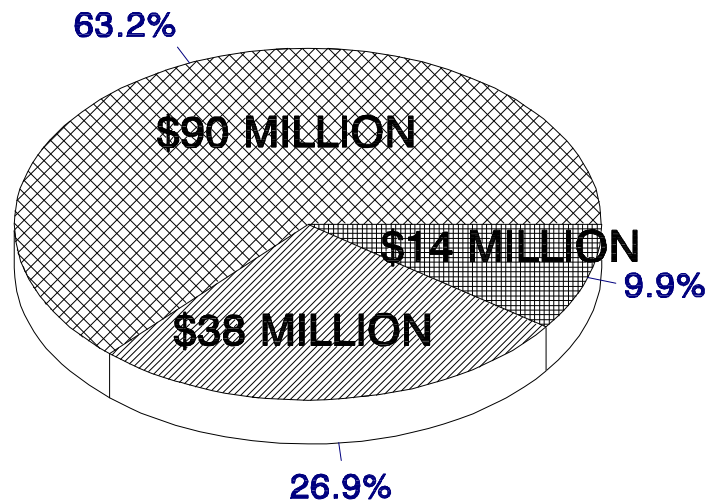
Table 13. EQUINE-RELATED EXPENDITURES, KANSAS, 1995

Expense Category	Total Expenditures	Average Per Operation
	1,000 Dollars	Dollars
<u>Operating Expenses</u>	90,242	
Boarding and Training Fees (Stall Fees and Fees Paid for Training Equines and/or Individuals)	8,356	5,562
Feed (Grain, Hay, and Supplements)	35,310	3,157
Bedding	1,633	669
Health (Veterinarian Fees)	6,098	986
Other Health (Medicines, Parasite Control, Lab Work, Etc.)	1,760	406
Supplies (Clippers, Soaps, Oils, Sprays, Brushes, Tack, Etc.)	3,197	508
Farrier	5,780	739
Breeding Fees	2,323	1,487
Maintenance/Repair (Contracted Labor and Materials for Buildings, Facilities, Fencing, Equipment, Etc.)	5,875	1,937
Insurance Premiums (Equine-Related; Liability, Collision, Mortality, Etc.)	2,383	910
Utilities (Equine-Related; Telephone, Water, Natural Gas, Heating Oil, Electricity, Etc.)	2,422	649
Taxes (Property Tax on Equine-Related Land)	3,605	663
Rent/Lease (Land, Buildings, Equines, Equipment, Etc.)	1,162	835
Fees and Payments (Equine Registration, Entry and Membership Fees, Etc.)	3,870	1,070
Shipping and Travel (Air Travel, Fuel, Truck and Car Expenses, Meals, Shipping of Equines, Etc.)	4,776	1,578
Miscellaneous (Cost of Ads, Entertainment, Pamphlets, Subscriptions, Etc.)	1,659	641
<u>Capital Expenses</u>	38,366	
Purchases of Equines	14,208	5,372
Real Estate Purchases and Improvement	8,514	8,331
Equipment Purchases	15,644	7,427
<u>Labor Expenses</u>	14,148	
Cash Labor Expenditures	13,259	1,644
Value of Non-Cash Items Provided to Workers	889	206
Total Expenses (Equine-Related)	142,756	

LEADING EQUINE EXPENDITURES



TOTAL EQUINE RELATED EXPENDITURES



**Table 14. EQUINE INVENTORY AND VALUE BY COUNTY,
KANSAS, JANUARY 1, 1996**

County & District	Total Equines	Rank in State	Inventory Value (\$000)	County & District	Total Equines	Rank in State	Inventory Value (\$000)
CHEYENN	340	90	901	BARBER	740	51	818
DECATUR	250	96	1,023	COMANCH	1,045	34	1,330
GRAHAM	350	89	717	EDWARDS	400	81	739
NORTON	620	57	1,693	HARPER	605	58	773
RAWLINS	490	72	949	HARVEY	1,345	24	2,767
SHERIDA	85	104	123	KINGMAN	1,670	12	2,539
SHERMAN	535	64	800	KIOWA	285	93	507
THOMAS	400	81	930	PAWNEE	385	84	372
NW	3,070		7,136	PRATT	980	38	1,816
GOVE	380	85	377	RENO	3,325	3	5,960
GREELEY	280	94	287	SEDGWICK	6,515	1	11,858
LANE	485	73	990	STAFFORD	360	87	496
LOGAN	395	83	476	SUMNER	1,665	13	3,737
NESS	475	77	291	SC	19,320		33,712
SCOTT	935	41	2,044	ATCHISON	505	66	717
TREGO	200	98	354	BROWN	605	58	641
WALLACE	500	68	748	DONIPHAN	970	39	1,339
WICHITA	880	46	1,329	JACKSON	2,150	8	2,447
WC	4,530		6,896	JEFFERSO	1,650	14	1,885
CLARK	455	79	872	LEAVENW	1,390	23	2,288
FINNEY	1,460	21	2,904	MARSHAL	810	49	1,156
FORD	1,060	33	4,712	NEMAHA	90	105	80
GRANT	355	88	1,322	POTTAWA	890	44	1,675
GRAY	1,030	35	1,869	RILEY	1,215	29	1,403
HAMILTO	440	80	349	WYANDOT	1,465	20	775
HASKELL	710	53	1,654	NE	11,740		14,406
HODGEM	150	100	375	ANDERSO	825	48	1,042
KEARNY	295	92	257	CHASE	890	44	1,135
MEADE	1,170	31	1,930	COFFEY	670	54	1,119
MORTON	575	62	1,473	DOUGLAS	1,540	19	9,743
SEWARD	1,320	26	3,203	FRANKLIN	2,875	5	5,385
STANTON	255	95	380	GEARY	480	74	520
STEVENS	495	71	794	JOHNSON	4,455	2	10,884
SW	9,770		22,094	LINN	895	43	802
CLAY	465	78	764	LYON	1,425	22	1,746
CLOUD	530	65	596	MIAMI	2,015	10	3,627
JEWELL	210	97	138	MORRIS	1,330	25	1,601
MITCHELL	315	91	591	OSAGE	1,220	28	1,599
OSBORNE	805	50	1,236	SHAWNEE	2,110	9	4,435
OTTAWA	605	58	1,589	WABAUNS	1,030	35	1,347
PHILLIPS	1,605	15	2,035	EC	21,760		44,985
REPUBLIC	640	55	1,028	ALLEN	990	37	716
ROOKS	480	74	526	BOURBON	1,105	32	1,606
SMITH	505	66	778	BUTLER	3,260	4	4,883
WASHING	590	61	509	CHAUTAU	500	68	1,033
NC	6,750		9,790	CHEROKEE	560	63	1,662
BARTON	955	40	2,024	COWLEY	1,590	17	3,779
DICKINSO	1,600	16	3,401	CRAWFOR	1,290	27	1,637
ELLIS	640	55	1,381	ELK	830	47	1,329
ELLSWOR	480	74	981	GREENWO	1,180	30	1,510
LINCOLN	375	86	586	LABETTE	1,545	18	1,239
MCPHERS	140	101	150	MONTGOM	2,325	7	6,786
MARION	1,760	11	2,516	NEOSHO	920	42	1,793
RICE	500	68	613	WILSON	185	99	184
RUSH	130	102	82	WOODSON	130	102	147
RUSSELL	715	52	828	SE	16,410		28,304
SALINE	2,355	6	3,134	STATE	103,000		183,019
C	9,650		15,696				

EQUINE SURVEY PROCEDURES

PURPOSE

A survey to determine the size and economic impact of the Kansas equine industry was conducted in 1996 by Kansas Agricultural Statistics, in cooperation with the Kansas Horse Council and Kansas Equine Extension. Equine was defined as any horse, mule, donkey, or pony kept on an operation within Kansas. The purpose of this survey is to help those who are interested in expanding the Kansas equine industry through economic development and to develop a raised awareness of the role of equine in Kansas.

SURVEY DESIGN

The Equine list sampling frame was stratified using the size of the operation. A systematic random sampling was then taken from each strata. The total list frame sample was 3,006 operators. List frame data were collected by mail in late January 1996 with telephone follow-up interviews for those not responding by mail.

A list was compiled from the 1995 June Area Agricultural Survey of operators in agricultural strata who reported having equine on their operations. This list of equine operations was compared to those found on the list sampling frame. The operations from the June Area Agricultural Survey that were

from agricultural strata and were not found on the list frame were defined as "non-overlap." A complete sampling of all 237 non-overlap operations was taken. Of those, 38 were inaccessible or refused to participate in the survey. Manual estimations were done for these reports. Non-overlap operations data were collected by telephone interviews and by mailed surveys during late January 1996.

The area frame sample for urban strata consisted of 99 segments. Area frame segments are parcels of land that vary in size from approximately one square mile to one tenth of a square mile in size. The area frame was used to sample urban areas. Data were collected by personal interview from operations with equine or equine facilities found in these segments. There were 27 urban tracts with equine. Of those, only 2 refused to participate in the survey. Manual estimations were done for these reports. Using this method of multiple frames provided a complete sampling frame of Kansas equine operations.

SUMMARIZATION

All questionnaires were normally reviewed before being computer edited and summarized. Data from the list sample of 3,006 were

expanded by strata and summarized. Then the data from all the area tracts that were non-match with the equine list frame were expanded and added to the results of the list summary. This resulted in a multi-frame indicator which was rounded and published as an estimate.

RELIABILITY

The estimate from a sample survey will vary depending upon the units selected in the sample. The variation in the expansions are measured by the relative error of the estimate which is the estimate divided by the statistical sampling error. The relative error gives an indication of the confidence that can be assigned to the survey expansion. Statistically, this survey was designed to estimate the equine population at the State level.

The relative error for the total number of equines was 5.7 percent. For light horses, the relative error was 6.1 percent. Higher relative errors were produced for ponies, draft horses, donkeys, and mules due to the low number of sampling units reporting these classes of equine. The relative error for ponies was 16.3 percent. District estimates have larger relative errors than the State reliability shown above.