

2019 PASTURE LEASING ARRANGEMENTS IN KANSAS

Xianghong Li
And
Leah J. Tsoodle

March 2020

Department of Agricultural Economics

Kansas State University

Introduction

Pastureland is Kansas' second largest agricultural land use. As a resource, grazing land supports the beef and sheep industries, provides habitat for wildlife, and provides surface water to streams. The 2017 Census of Agriculture showed Kansas pastureland totaled 15,599,779 acres, and the total sales of cattle and calves in Kansas was \$10.91 billion, accounting for 58.1% of Kansas' total market value of agricultural products sold.¹ Given these statistics, understanding Kansas pasture use and practice is vital to the future of Kansas agriculture.

The Land Use Survey Center (LUSC) in the Department of Agricultural Economics at Kansas State University (KSU), with support from the Kansas Department of Revenue, conducted the 2019 Kansas Pasture Survey to collect information on pasture land use and practices. LUSC conducted the survey for both native and tame pasture uses in 2019. The survey included questions on grazing outlook, pasture availability, pasture leasing rates, and charges for fence building. The results presented in this report come from 277 usable responses from this survey, and some of the results also include 137 responses from the 2019 Bluestem Pasture Survey.² About 47% of the respondents were pasture landowners, 32% of the respondents were livestock owners, and 20% were livestock caregivers. This article summarizes the information collected from the surveys on current Kansas pasture lease arrangements and fence information.³ This report is intended to provide timely information on Kansas pasture use and practices to interested stakeholders, including landowners, managers, operators, extension personnel, consultants, lenders, and policy makers.

The type of pasture differs across the CRDs for multiple reasons, including differences in soil and rainfall.⁴ Within Kansas, pastureland is classified into two categories, native and tame pasture. These are more commonly referred to as rangeland and improved pasture, respectively. Native pasture is rangeland that contains grasses native to the region, without improvement through agronomic practices. The three native categories of pasture covered in the survey are tallgrass prairie, mixed grass prairie, and shortgrass prairie. Tame pasture has primarily been non-native grass species that are planted and managed with agronomic practices (seeding, fertilizer, etc.). The major species are smooth brome grass, tall fescue, and Bermuda grass. More recently, native species have been planted using similar practices with similar performance characteristics.

Pasture Lease Arrangements

The National Agricultural Statistics Service-Kansas office (NASS) divides Kansas into nine crop-reporting districts (CRDs) numbered 10 through 90 (Figure 1), and these CRDs are used to group survey responses. According to survey respondents, Kansas pasture was in relatively good condition in 2019 in all districts (Table 1). More than 50% of the pasture in each

¹ Data source: 2017 Census of Agriculture, USDA.

https://www.nass.usda.gov/Publications/AgCensus/2017/index.php#full_report.

² The information presented on pasture conditions, water sources, range burning, and respondents' role in pasture leases combines responses from both the 2019 Kansas Pasture Survey and the 2019 Bluestem Pasture Survey. All other results are based solely on responses to the 2019 Kansas Pasture Survey.

³ A copy of the surveys is available upon request and additional information pertaining to the surveys is available from the Kansas State University Department of Agricultural Economics.

⁴ Please refer to "Crop Profile for Pasture/Rangeland in Kansas (USDA NIFA, <https://ipmdata.ipmcenters.org/documents/cropprofiles/KSpasture.pdf>)" for detailed discussion on Kansas pasture.

CRD was considered to be in either good to excellent condition, except for the northwest district, NW-10. A small percentage of pasture was regarded as very poor or poor. The majority of the pasture in the state was in adequate or better condition this year, which was probably attributable to the above average rainfall in the spring. In the eastern region, ponds were the leading source of water supply for livestock in pastures in 2019, followed by stream or spring-fed wells. The main sources of water supply in the western region of the state were well, electric-powered well, windmill, or solar powered. Range burning occurred mostly in the eastern CRDs, NE-70, EC-80, and SE-90; pasture in the western region was seldomly burned, according to respondents. In 2019, burning happened as early as mid-February, and most of the burning took place on April 10th.

The responses to the 2019 Kansas Pasture Survey showed that the majority of Kansas pasture was under contract (Table 2). In each CRD, over 88% of the available pasture was under contract. The percentage of pasture under contract for the state was relatively higher for improved pasture than for rangeland. This result may be a reflection of both the demand for pasture and the time frame, April through June, in which the survey was conducted. Most of the leasing arrangements involving tame pasture are in the central and eastern thirds of the state.⁵

For the state, about 15% of the respondents were involved in pasture leases for activities other than livestock (Table 3). Generally, moving from north to south and from west to east, the percentage of leases for purposes other than livestock increased. Almost 31%, the highest in the state, of the respondents in SE-90, leased for activities other than livestock. Hunting and haying were the two main activities other than livestock; oil leases were another activity written in by respondents. The average per acre rent for hunting was \$7.66 in 2019, while the per acre rent for haying averaged \$26. For respondents who had tame pasture, 22.86% of them reported that they harvested hay to sell off of that pasture. About 24% of the respondents in the state had contracts where the tenant and landlord were related. Almost 57% of the leases in the state were oral, rather than written, leases.

The percentage of leasing arrangements involving each type of pasture, rangeland and improved, in 2019 is presented in Table 4. In the western third of Kansas, average annual rainfall ranges from 16 to 20 inches, and the growing season ranges from 150 days in the northern CRD to 185 days in the southern CRD. Given those conditions, short grass prairie dominates the western rangeland, CRDs 10-30. The central third of the state, CRDs 40-60, has relatively more rainfall and a longer growing season. Thus, mixed grass prairie is the largest share of the rangeland in this region. Tall grass prairie is mainly located in the eastern third of Kansas, CRDs 70-90. In this area, the average annual rainfall is between 30 and 42 inches, and the growing season is between 170 days in the north to more than 200 days in the southern part of the region.

Kansas pasture leases involve different types of contracts. In most of the western and central CRDs of Kansas, partial summer contracts were less popular than full summer or full year contracts in 2019 for both native and tame pasture (Table 5). The majority of leases for native pasture were full summer leases in five of the nine CRDs. The majority of native acres in CRDs SW-30 and SC-60 were under full year contracts. Partial summer contracts were more common for native pasture in the eastern regions of Kansas. In the east-central and southeast CRDs, EC-80 and SE-90, respectively, about 67% and 44% of the native acres were under partial

⁵ Less than 1,000 acres are classified as improved pasture in the western third of Kansas, CRDs 10-30. Therefore, most of the 2019 survey responses for improved pasture came from CRD 40-90.

summer contracts. The high proportion of acres under partial summer contract in those areas is, primarily, because early double-stocking is a common practice there. Moving from north to south, the percentage of native grass acreage under full year contracts generally increased. Tame pasture did not mirror that trend. The majority of tame acres in three of the nine CRDs were under full summer contracts; in four others, most tame acres were under full year contracts. Most tame acres in NC-40 and EC80 were under full summer contracts. In SC-60, NE-70, and SE-90, most tame acres were contracted for the full year. In the center of the state, C-50, most of the tame acres were under partial summer contracts. For the state, about 35%, 24%, and 40% of total native pasture was under full summer, partial summer, and full year contracts, respectively. In 2019, about 34%, 12%, and 53% of total tame pasture was under full summer, partial summer, and full year contracts for the state, respectively.

The reported stocking rate acreage for both cow/calf pair and stocker were higher for native pasture relative to tame pasture in all districts, except SE-90 (Table 6). The stocking rate acreage was higher in the western region of the state than in the eastern region of the state. Regarding cow/calf pair, the average stocking rate for native (tame) pasture for the state was 9.74 (7.04) acres. The stocker average stocking rate was 4.54 acres and 3.11 acres for native and tame pasture, respectively.

Cash Rents and Pasture Size

The rental value of the pasture land in Kansas was highly correlated with temperature and rainfall patterns. In Kansas, natural forage production increases as rainfall increases and temperature decreases. Increased grass production potential influences rental values. Tables 7a and 7b shows the distribution of cash rents for both native and tame pasture by crop reporting district in 2019 and 2015. In general, cash rent increased moving from west to east and from south to north. Corresponding to the rising livestock prices, the rental rates of both native pasture and tame pasture increased in 2019 relative to the values in 2015 in all nine crop reporting districts. Increases in native pasture rental rates ranged from 10.40% in SC-60 to 22.40% in EC-80. The percentage increase in cash rent for tame pasture was higher than the percentage increase of native pasture cash rent. For tame pasture, the changes in cash rent from 2015 to 2019 were not uniform across crop reporting districts. Among the seven crop reporting districts where cash rent changes can be computed for tame pasture, the increases ranged from 4.60% in SW-30 to 66.67% in NC-40, and the average increase for the state was 30.45%. The combined rate is the average of all native and tame responses to the cash rent question. The combined rate increased almost 15% for the state from 2015 to 2019.

Across the state, tame pasture rent is higher than native pasture. The average tame/native rent ratios in Table 7a illustrate that in all crop reporting districts, cash rents of tame pasture showed some premium over those of native pasture. Tame pasture rent was, on average, 33.50% more than native pasture in 2019. The higher rental value of the tame pasture is partially explained by the higher costs and more intense management requirements of tame pasture. The difference in rental value between tame and native pasture has also changed over the years. The premium of tame pasture rental rate over native pasture rental rate in 2019 increased compared to the premium in 2015, except in SW-30.

Crop residue was leased for grazing either on a dollar per acre basis or on a dollar per head per day basis. The two commonly reported crop residues for grazing were corn and milo

(Table 8). The rent for leasing corn residue averaged \$11.79/acre or \$0.77 per head per day. The average rent for milo residue was \$10.19/acre or \$0.62 per head per day in 2019, lower than the average rent for corn residue.

Table 9 shows the mode pasture size by crop reporting district. The mode pasture size was 160 acres for native pasture in 2019 across the nine CRDs. The typical sizes of tame pasture were relatively smaller than the corresponding native pastures. The relatively larger mode size of native pasture reflects the management intensive nature of tame pasture. Compared with survey responses in 2010 and 2015, the mode pasture size in 2019 was larger in several districts. This change may reflect the trend in Kansas toward fewer agricultural entities that are managing more acres. In addition, about 11% of the total respondents for both native and tame pasture thought that his/her area lease rates would decrease as pasture size increased.

Fence Requirements and Characteristics

In Table 10, the average feet of fence per acre is presented for both native and tame pastures with 2019 and 2015 data for comparison. To be consistent with the previous data, the feet of fence per acre is half of the amount reported in the survey because many pasture lots share boundary fences and a landlord would be responsible for, on average, half of the fencing enclosing any given pasture. No systematic pattern is shown across crop reporting districts, probably because the length of fence required per acre of pasture is affected by many factors, including pasture size, pasture shape, and the number of cross fences. As the pasture size increases, the feet of fence per acre decreases, and as pasture size becomes more irregular, the feet of fence per acre increases. As a result, we would expect smaller pastures to have a higher average feet of fence per acre; however, a larger pasture may still have a higher average, if the larger pasture is irregularly shaped. The average feet of fence per acre for native pasture in 2019 increased from 2015. The changes in the average feet of fence per acre for tame pasture were not as uniform as the changes for native pasture. The average feet of fence per acre decreased from the 2015 values in five crop reporting districts. In SC-60, NE-70, and SE-90, the averages for feet of fence per acre in 2019 were higher than the 2015 values. Further study might reveal additional reasons for the change.

Most of the most recent boundary fences were built after 2015, in all crop reporting districts. District mode typical fence data are presented in Tables 11a & 11b. The most prevalent wire for Kansas pasture fencing is barbed (Table 11a). In NW-10 and WC-20, 4 strand fences were typical, and 5 strand fences were the mode in all other crop reporting districts. Treated wood posts were used most often in NW-10. All steel posts were common in EC-80 and SE-90. In all other crop reporting districts, a combination of wood and steel posts was most commonly used for fences. Typical post spacing ranged from 12 to 16 feet. Most of the pasture is not permanently cross fenced, regardless of its size. The typical number of steel gates ranged from 1 to 4 across all crop reporting districts. The typical number of wire gates were 1 or 2 in all crop reporting districts. Given typical maintenance, pasture fence has a useful life that can reach 50 years (Table 11b). Most of the mode changes between 2019 and 2015 occurred in the number of steel and wire gates.

Pasture Maintenance Costs and Landlord's Share of Expenses

To retain the long-term asset value of pasture, the land needs to be maintained. Table 12 lists the average costs to maintain pasture for both native and tame pasture in 2019. Pasture maintenance costs in 2019 were reported to be higher than 2015 costs. On average, total maintenance costs for tame pasture were higher than the costs for native pasture, reflecting higher management intensity associated with tame pasture. Fertilizer costs were the leading expense for tame pasture. Costs for fence materials, labor, and brush and weed control were leading expenses for native pasture.

Although the vast majority of pastureland is leased on a cash basis, landlords participate in maintenance expenses to retain the long-term value of their asset. Tables 13a and 13b provides information on the type and percent of expenses in which landlords share with the renter. Landlords are responsible for the majority of the fence material costs, whereas tenants took care of a large portion of fence labor costs and maintenance. Landlords also provide most of the chemicals for brush and weed control, while application costs are mainly paid by the tenants. Moreover, landlords pay more of the water supply costs, and fertilizing is primarily paid by the tenants.

Conclusion

Kansas pasture land is very important for the Kansas livestock industry and state economy as a whole. The 2019 pasture survey suggests that the majority of the pasture land in Kansas was under contract. The pastureland rental market can be affected by changes in farm policy, commodity prices, technology, and many other factors. The cash rents for both native pasture and tame pasture have increased since the 2015 Pasture Survey. The changes in the pasture rent can be partly attributed to the changes in commodity prices and maintenance cost. Changes in the traditional arrangements present in a region may also help explain changes in rental rates. Although traditional arrangements, which have been in place for lengthy time periods, may not be affected by changes in markets, legislation, or farming practices (Albright et al, 1996), extension specialists contend that, relatively speaking, tradition is changing rapidly in recent years.

Most related K-State Research and Extension publications pertaining to pasture-land leasing arrangements can be found at www.AgManager.info . Below are some of the older and current publications.

Buller, et al. “Economic Evaluation of Season-Long and Intensive-Early Stocking System.”
Contribution number 90-274-S from KAES, 1990.

Dhuyvetter, Kevin and Glynn Tonsor. “Summer Grazing of Steers in Western Kansas.”
Publication Number MF1007, Revised April 2014.

Dhuyvetter, Kevin and Glynn Tonsor. “Summer Grazing of Steers in Eastern Kansas.”
Publication Number MF1008, Revised April 2014.

Dumler, Troy and Kevin Dhuyvetter. “Frequently Asked Questions: Pasture Leases in Kansas.”
Publication # AM-TJD-2011.2, October 2011.

Kansas Department of Agriculture and K-State Land Use Survey Center. “Bluestem Pasture Release 2019.” <http://agmanager.info/land-leasing/land-buying-valuing/land-use-value-research/bluestem-pasture-release-2019>.

O’Brien, D., “Factors Affecting Kansas Pasture Rental Rates.” K-State Research and Extension,
November 2000.

Schlegel, Jen and Leah J. Tsoodle. “2010 Pasture Leasing Arrangements in Kansas.” Kansas
State University, Department of Agricultural Economics, Manhattan, Kansas, Paper # 11-
05, February 2011.

Taylor, Mykel. “2018 Kansas County-Level Land Values for Cropland and Pasture.”
<http://agmanager.info/land-leasing/land-buying-valuing/2018-kansas-county-level-land-values-cropland-and-pasture>.

Tsoodle, Leah J., Bill Golden, and Allen Featherstone. “Determinants of Kansas Agricultural
Land Values.” Selected Paper prepared for presentation at the Southern Agricultural
Economics Association Annual Meeting, Mobile, Alabama, February 1-5, 2003.

Tsoodle, Leah J. and Xianghong Li. “2015 Pasture Leasing Arrangements in Kansas.” Kansas
State University, Department of Agricultural Economics Manhattan, Kansas, February 4,
2017. <http://agmanager.info/land-leasing/land-buying-valuing/land-use-survey-center/2015-pasture-leasing-arrangements-kansas>.

USDA NIFA, Crop Profile for Pasture/Rangeland in Kansas.
<https://ipmdata.ipmcenters.org/documents/cropprofiles/KSpasture.pdf>.

Table 1. Condition of the Pasture, 2019

	Very poor (%)	Poor (%)	Adequate (%)	Good (%)	Excellent (%)
NW-10	1.11	1.67	52.22	26.67	18.33
WC-20	2.00	3.80	16.40	44.20	33.60
SW-30	0.50	2.25	12.25	45.50	39.50
NC-40	4.58	13.39	25.65	29.45	26.94
C-50	3.25	10.31	21.69	46.37	18.38
SC-60	5.00	10.50	12.00	47.42	25.08
NE-70	2.27	13.33	28.03	43.03	13.33
EC-80	1.33	6.65	18.06	45.30	28.66
SE-90	2.37	6.38	24.21	48.13	18.91
State	2.40	7.89	21.79	43.91	24.02

Table 2. Percentage of the Pasture in the Area under Contract, 2019

	% of Acres under Contract			
	Native		Tame	
	(%)	# Responses	(%)	# Responses
NW-10	96.25	8	1/	
WC-20	97.55	11	1/	
SW-30	98.13	8	1/	
NC-40	91.05	19	100.00	4
C-50	99.48	31	95.00	10
SC-60	98.90	10	99.75	4
NE-70	89.77	13	98.13	8
EC-80	98.05	19	96.93	14
SE-90	88.89	19	98.57	7
State	95.29	138	97.57	51

1/ Insufficient reports to publish.

Table 3. Pasture Lease Arrangement Characteristics, 2019

	Pasture Leased for Activities other than Livestock (%)	Tame Pasture Harvested Hay to Sell (%)	Landowner is Related to Tenant (%)	Oral Lease (%)
NW-10	0.00	22.22	0.00	81.82
WC-20	0.00	10.00	15.38	69.23
SW-30	20.00	33.33	20.00	70.00
NC-40	4.35	17.65	34.78	52.17
C-50	20.00	23.08	33.33	58.82
SC-60	21.43	10.00	33.33	50.00
NE-70	10.00	26.67	33.33	55.56
EC-80	12.90	41.38	23.33	48.28
SE-90	30.77	5.56	8.00	48.00
State	14.67	22.86	23.86	56.57

Table 4. Pasture Types under Leasing Arrangements, 2019

Pasture Type Districts	Native Pasture			Tame Grass Pasture
	Tall-Grass	Short-Grass	Mixed-grass	
NW-10	5.71%	60.00%	28.57%	5.71%
WC-20	0.00%	77.42%	22.58%	0.00%
SW-30	5.00%	62.50%	20.00%	12.50%
NC-40	16.95%	13.56%	54.24%	15.25%
C-50	20.41%	17.35%	52.04%	10.20%
SC-60	19.70%	15.15%	46.97%	18.18%
NE-70	30.95%	7.14%	16.67%	45.24%
EC-80	41.58%	8.91%	15.84%	33.66%
SE-90	49.12%	3.51%	14.04%	33.33%
State	24.57%	22.50%	32.14%	20.79%

Table 5. Percentage of Pasture under Various Types of Leasing Arrangements (%), 2019

	Native Pasture			Tame Pasture		
	Full Summer	Partial Summer	Full Year	Full Summer	Partial Summer	Full Year
NW-10	63.61	7.55	28.84	38.10	0.00	61.90
WC-20	59.78	9.84	30.38	No Response		
SW-30	9.32	34.92	55.76	50.61	2.43	46.96
NC-40	81.65	7.41	10.94	65.22	28.23	6.55
C-50	61.33	19.86	18.81	31.05	47.02	21.93
SC-60	14.20	0.47	85.33	32.30	28.21	39.49
NE-70	66.21	15.67	18.12	37.00	4.89	58.12
EC-80	20.28	66.76	12.96	56.98	6.22	36.80
SE-90	33.25	44.02	22.73	4.17	0.00	95.83
State	35.40	24.11	40.49	34.36	12.24	53.40

Table 6. Pasture Stocking Rates (Acres), 2019

	Cow/Calf		Stocker	
	Native	Tame	Native	Tame
NW-10	10.40	9.40	9.55	6.00
WC-20	13.07	1/	5.90	1/
SW-30	12.71	8.11	4.49	3.00
NC-40	8.71	4.30	3.33	1/
C-50	8.47	4.00	3.64	1/
SC-60	10.76	4.13	5.56	1/
NE-70	8.72	5.71	4.25	2.17
EC-80	8.29	7.88	2.83	2.25
SE-90	8.83	9.66	3.51	5.00
State	9.74	7.04	4.54	3.11

1/ Insufficient reports to publish.

Table 7a. District Average Native Pasture Cash Rents & Tame/Native Rent Ratio

	Native Pasture Cash Rents			Average Tame/Native Rent Ratio		
	2019	2015	Changes from 2015	2019	2015	Changes from 2019
NW-10	\$18.35	\$15.81	16.04%	196.23%	1/	2/
WC-20	\$13.74	\$12.40	10.78%	1/	1/	2/
SW-30	\$12.73	\$11.11	14.59%	119.16%	130.55%	-8.72%
NC-40	\$26.03	\$21.57	20.66%	130.19%	94.25%	38.13%
C-50	\$23.72	\$20.91	13.42%	148.78%	127.53%	16.66%
SC-60	\$17.72	\$16.05	10.40%	133.40%	110.59%	20.62%
NE-70	\$25.46	\$21.07	20.85%	132.63%	122.71%	8.08%
EC-80	\$26.48	\$21.64	22.40%	111.73%	109.72%	1.83%
SE-90	\$25.73	\$21.21	21.30%	106.05%	96.86%	9.49%
State	\$21.87	\$19.06	14.75%	133.50%	117.43%	13.68%

1/ Insufficient reports to publish.

2/ Percentage change cannot be computed.

Table 7b. District Average Tame Pasture Cash Rents & Combined Cash Rents

	Tame Pasture Cash Rents			Combined Average Kansas Cash Rents		
	2019	2015	Changes from 2015	2019	2015	Changes from 2015
NW-10	\$36.00	1/	2/	\$21.50	\$15.20	41.40%
WC-20	1/	1/	2/	\$13.80	\$12.40	11.29%
SW-30	\$15.17	\$14.50	4.60%	\$13.19	\$11.53	14.34%
NC-40	\$33.89	\$20.33	66.67%	\$27.44	\$21.23	29.24%
C-50	\$35.29	\$26.67	32.32%	\$24.91	\$22.15	12.45%
SC-60	\$23.64	\$17.75	33.16%	\$19.23	\$16.28	18.10%
NE-70	\$33.77	\$25.85	30.62%	\$29.62	\$23.27	27.29%
EC-80	\$29.59	\$23.74	24.64%	\$27.83	\$22.97	21.18%
SE-90	\$27.28	\$20.54	32.81%	\$26.33	\$21.94	20.03%
State	\$29.20	\$22.38	30.45%	\$23.77	\$20.72	14.74%

1/ Insufficient reports to publish.

2/ Percentage change cannot be computed.

Table 8. District Average Rental Rate for Crop Residue Grazing, 2019

	Crop Residue Grazing Rent			
	(\$/Acre)		(\$/Head/Day)	
	Corn	Milo	Corn	Milo
NW-10	12.25	7.00	0.41	0.43
WC-20	1/	1/	0.48	0.66
SW-30	1/	1/	1/	0.62
NC-40	1/	11.20	1/	No response
C-50	13.43	10.80	0.63	1/
SC-60	11.45	10.23	1/	0.65
NE-70	No Response	No Response	1.83	No response
EC-80	10.67	No Response	0.60	1/
SE-90	No Response	No Response	No Response	No Response
State	11.79	10.19	0.77	0.62

1/ Insufficient reports to publish.

Table 9. District Mode Pasture Size

	Native Mode Pasture Size (Acres)			Tame Mode Pasture Size (Acres)		
	2019	2015	2010	2019	2015	2010
NW-10	160	200	80	80	100	80
WC-20	160	80	160	No Responses		
SW-30	160	160	80	160	60	80
NC-40	160	80	80	160	80	40
C-50	160	160	80	160	30	40
SC-60	160	80	80	160	60	40
NE-70	160	80	80	80	80	40
EC-80	160	80	40	80	80	40
SE-90	160	80	80	80	80	80

Table 10. Mode Average Feet of Fence per Acre

	Fence per Acre (Feet/Acre)			
	Native		Tame	
	2019	2015	2019	2015
NW-10	46.06	34.40	45.93	52.80
WC-20	48.70	18.60	45.93	1/
SW-30	39.30	25.40	32.67	33.00
NC-40	52.05	38.90	43.10	57.90
C-50	48.42	30.40	33.23	56.60
SC-60	50.38	27.80	45.93	25.70
NE-70	46.00	26.40	45.93	44.90
EC-80	46.06	34.70	38.01	55.70
SE-90	40.65	22.10	45.93	41.50

1/ Insufficient reports to publish.

Table 11a. District Mode Typical Fence Data

	2019		2015		2019		2015	
	Fence Type	Resp.	Fence Type	Resp.	Post Type	Resp.	Post Type	Resp.
NW-10	4-Wire-Barb	10	4-Wire-Barb	3-Tie	Treated Wood	7	Combination Steel & Wood	3-Tie
WC-20	4-Wire-Barb	4	4-Wire-Barb	8	Combination Steel & Wood	12	Combination Steel & Wood	5
SW-30	5-Wire Barb	8	4-Wire-Barb	4-Tie	Combination Steel & Wood	11	Combination Steel & Wood	5
NC-40	5-Wire Barb	20	5-Wire Barb	12	Combination Steel & Wood	22	Combination Steel & Wood	14
C-50	5-Wire Barb	22	5-Wire Barb	14	Combination Steel & Wood	16	Combination Steel & Wood	20
SC-60	5-Wire Barb	17	5-Wire Barb	16	Combination Steel & Wood	16	Combination Steel & Wood	13
NE-70	5-Wire Barb	11	5-Wire Barb	20	Combination Steel & Wood	12	Steel	20
EC-80	5-Wire Barb	23	5-Wire Barb	39	Steel	20	Steel	39
SE-90	5-Wire Barb	24	5-Wire Barb	27	Steel	24	Steel	32

Resp. = Number of responses.

Table 11b. District Mode Typical Fence Data

	2019		2015		2019		2015		2019		2015	
	Post Spacing (Feet)	Resp.	Post Spacing (Feet)	Resp.	Pasture Size Cross Fenced (Acres)	Resp.	Pasture Size Cross Fenced (Acres)	Resp.	Fence Life (Years)	Resp.	Fence Life (Years)	Resp.
NW-10	15	3-Tie	16	2-Tie	No Pasture	7	No Pasture	6	35	4	50	3
WC-20	16	5	16.5	3	320-640	10	No Pasture	5	30	6-Tie	30	2-Tie
SW-30	12	3	12	5	No Pasture	3-Tie	No Pasture	6	30	5-Tie	30	4
NC-40	12	5	15	5	No Pasture	10	No Pasture	15	40	6-Tie	50	7
C-50	12	6-Tie	12	7-Tie	No Pasture	19	All	13	50	14	50	7
SC-60	15	5	15	4-Tie	No Pasture	8	No Pasture	11	50	12	30	5
NE-70	12	7	10	8	No Pasture	12	No Pasture	19	50	9	20	17
EC-80	16	9	12	13-Tie	No Pasture	16	No Pasture	22	30	14	20	28
SE-90	16	7	15	9	No Pasture	12	No Pasture	19	50	9	20	33

Table 12. Average Pasture Maintenance Cost, 2019

Cost	Native (\$/Acre)	Tame (\$/Acre)
Fence Materials	2.46	3.42
Fence Labor	2.54	3.42
Water Supply	1.99	3.99
Chemicals for Weed Control	3.43	6.09
Application	4.29	5.03
Burning	1.83	No Response
Other	2.31	No Response
Reported Total Maintenance Cost	10.55	15.22

Table 13a. Average Landlord Percentage Participation in Costs (%), 2019

Districts	Fence Material Costs (%)	Fence Labor Costs (%)	Fertilizer (%)	Water Supply Cost (%)
NW-10	90.00	54.17	4.76	94.62
WC-20	93.75	12.22	0.00	65.38
SW-30	78.26	42.11	7.14	77.20
NC-40	90.45	30.00	23.30	48.42
C-50	96.36	32.50	16.67	53.53
SC-60	84.32	22.06	8.33	63.94
NE-70	97.50	36.00	16.67	53.85
EC-80	93.24	48.15	13.33	76.92
SE-90	84.85	26.00	31.82	73.08
State	89.99	33.18	15.62	66.63

Table 13b. Average Landlord Percentage Participation in Costs (%), 2019

Districts	Brush & Weed Control Chemicals (%)	Application Costs (%)	Burning Costs (%)	Other Costs (%)	Total Pasture Maintenance Costs (%)
NW-10	81.82	44.44	14.29	0.00	82.22
WC-20	50.00	14.29	0.00	87.50	50.00
SW-30	52.50	8.33	0.00	0.00	70.83
NC-40	58.70	18.50	25.00	0.00	77.65
C-50	73.95	39.14	35.42	91.67	54.50
SC-60	47.29	29.86	22.56	0.00	72.17
NE-70	70.59	37.50	14.29	0.00	49.23
EC-80	72.22	39.13	26.64	0.00	64.38
SE-90	69.35	55.86	37.72	0.00	52.78
State	64.90	36.17	25.44	43.48	63.08