



# Examining How We Sell Hay

## 2021 & 2022 Data as Reported in the Kansas Direct Hay Report

1310 A Westloop Place, # 144, Manhattan, KS 66502 ~ email: [info@ksfgc.org](mailto:info@ksfgc.org) ~ [www.ksfgc.org](http://www.ksfgc.org) ~ Facebook @KansasForage

### HAY MARKETS ARE UNIQUE

No two types of hay, hay seller or hay buyer are alike. The class or type of hay, growing conditions, stand quality, maturity, time of day when harvested, how it's packaged or sold, the volume produced or demanded, the animal species being fed, and distance between parties, all vary. And because there is no central marketplace, sales are made directly between buyer and seller, making relationships and trust important, and the Kansas Direct Hay Report vital, when trying to bargain and establish a price among buyers and sellers.

### WHAT WE LOOKED AT

KSFGC examined hay sales<sup>1</sup> (excluding bids and asks) in Kansas over the two-year period, 2021-2022, as downloaded from the USDA-AMS MARS data base<sup>2</sup>, which is based on actual Kansas hay sales collected by the Kansas Department of Agriculture in conjunction with the USDA, Agricultural Marketing Service. In all, 4,978 transactions were recorded in 2021, and 4,302 in 2022 for a total of 9,280. Combining both years, 8,646, (93.2%) of were for hay **sold by the ton**, with the rest recorded as **sold by the bale**.

### TRANSACTIONS BY CLASS (Type of Hay)

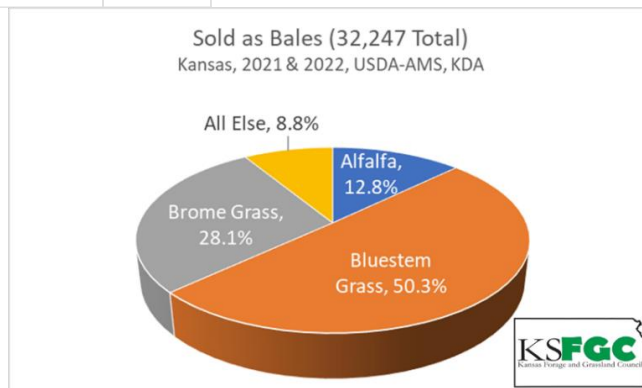
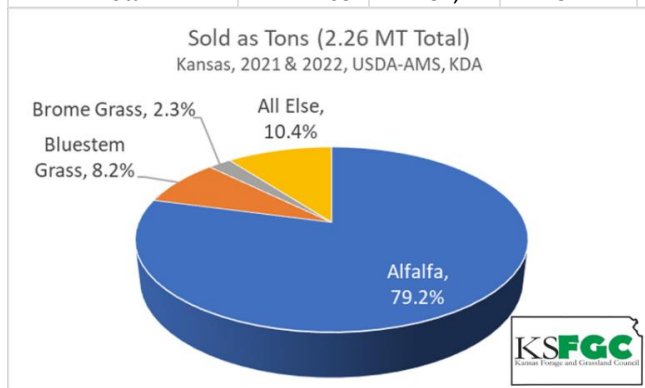
Transactions and Tons by Hay Class						
ALL Classes, ONLY Trades (excluding bids & asks), ONLY per Ton						
	Totals	Tons per		Average	-- Percents of Total --	
2021 & 2022 per TON	# of Trans.	Tons	Transaction	Price	Trans.	Tons
Alfalfa	4,984	1,788,806	359	\$205	57.6%	79.2%
Bluestem Grass	1,633	185,073	113	\$106	18.9%	8.2%
Brome Grass	626	51,717	83	\$124	7.2%	2.3%
All Else	1,403	234,199	167		16.2%	10.4%
Total	8,646	2,259,795	261			

ALL Classes, ONLY Trades (excluding bids & asks), ONLY per Bale						
	Totals	Bales per		-- Percents of Total --		
2021 & 2022 per BALE	# of Trans.	Bales	Transaction	Trans.	Bales	
Alfalfa	149	4,115	28	23.5%	12.8%	
Bluestem Grass	270	16,234	60	42.6%	50.3%	
Brome Grass	142	9,071	64	22.4%	28.1%	
All Else	73	2,827	39	11.5%	8.8%	
Total	634	32,247	51			

Twenty-one different classes or "types" of hay were reported sold in 2021 and 2022, but three, alfalfa, bluestem grass (i.e., warm season "hays," considered native or prairie hay) and brome combined, for over 80% of tons, bales, and transactions.

Other hays sold included: five differentiated alfalfa mixes (i.e., alfalfa mixed with bluegrass, forage, sudan, grass and oats), along with corn, corn stalks, fescue, grass, milo, oats, peanut, rye, soybean, sudan, teff, triticale and wheat.



<sup>1</sup> For this examination, "Average Price," is the simple calculated average of reported transactions displayed in each table.

<sup>2</sup> Differences sometimes arise in data and nomenclature as it is collected individually via phone interviews, and then reported in the Kansas Department of Agriculture's "Hay Market Radio Report," the Agricultural Marketing Services "Kansas Direct Hay Report (AMS 2885)," and lastly in the form it can be downloaded from the USDA-AMS Market Analysis & Reporting Services (MARS) data management system, which is a more limiting structure, combining all USDA Market News reporting functions into a single, standardized user-managed platform, accumulating and managing data from multiple states and reporting systems.

## TRANSACTIONS BY REGION

ALL Classes, ALL Qualities, ONLY Trades, ONLY per Ton					
Totals		Tons/		-- Percents of Total --	
2021 & 2022	# of Trans.	Tons	Trans.	Trans.	Tons
Northwest	645	54,485	84	7.5%	2.4%
Southwest	1,506	853,512	567	17.4%	37.8%
North Central	1,016	215,919	213	11.8%	9.6%
South Central	2,566	869,607	339	29.7%	38.5%
Northeast	866	71,596	83	10.0%	3.2%
Southeast	2,047	194,677	95	23.7%	8.6%
Total	8,646	2,259,795	261		

ALL Classes, ALL Qualities, ONLY Trades, ONLY per Bale

Totals		Bales/		-- Percents of Total --	
2021 & 2022	# of Trans.	Bales	Trans.	Trans.	Bales
Northwest					
Southwest	88	2,079	24	13.9%	6.4%
North Central	9	370	41	1.4%	1.1%
South Central	83	11,803	142	13.1%	36.6%
Northeast	371	14,820	40	58.5%	46.0%
Southeast	83	3,176	38	13.1%	9.8%
Total	634	32,247	51		

Southern Kansas had the most per ton sales reported in 2021 and 2022. Led by south central but followed closely by the southeast and southwest. These three regions accounted for just over 70% of transactions for ALL hay types and nearly 85% of tonnage.

Northeast Kansas led the way in hay sold by the bale, with 58.5% of transactions and 46% of bales sold. South central KS was next with 13.1% of transactions for ALL hay types and 36.6% of bales sold.

There were no reported sales by the bale in Northwest Kansas in either 2021 or 2022, and the north central total was all transacted in 2022.

## TRANSACTIONS BY REGION (SELECTED CLASSES)

At right we examine the regional per ton data a little closer, by breaking out five hay classes/types, alfalfa, bluestem grass (prairie hay), brome grass, sudan, and wheat hay.

These five hay classes make up a significant percentage of hay tonnage sold in each of the six regions.

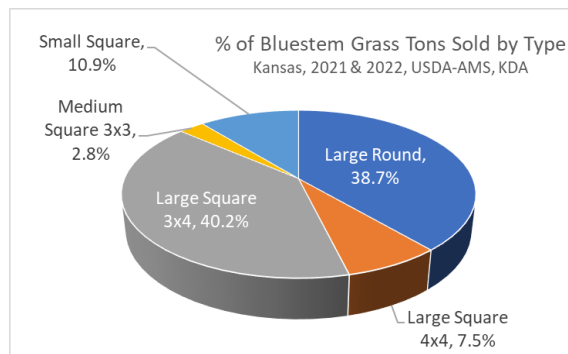
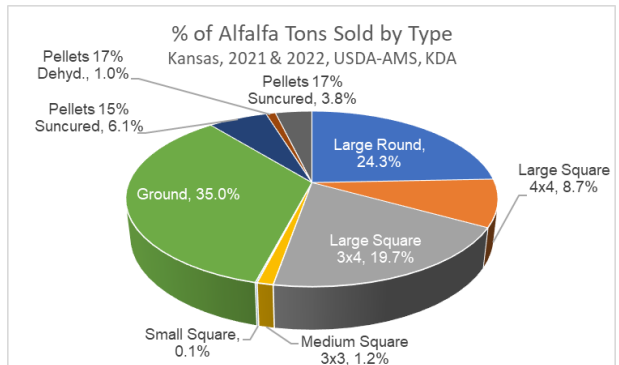
Northwest (95.3%),  
Southwest (98.9%)  
North Central (92.3%)  
South Central (90.9%)  
Northeast (99.8%)  
Southeast (99.3%)

ALL Qualities, ONLY Trades (excluding bids & asks), ONLY per Ton						
2021 & 2022 per TON	Totals	Alfalfa	Bluestem Grass	Brome Grass	Sudan	Wheat
Northwest						
Transasctions	645	488	4	0	41	44
Tons	54,485	44,881	571	0	1,007	5,478
Average Price	\$193	\$217	\$62	\$0	\$75	\$84
Southwest						
Transasctions	1,506	1,256	94	2	45	54
Tons	853,512	829,924	5,794	38	4,070	4,418
Average Price	\$201	\$220	\$99	\$150	\$89	\$95
North Central						
Transasctions	1,016	599	145	10	13	102
Tons	215,919	160,741	12,466	3,520	1,243	21,321
Average Price	\$156	\$181	\$135	\$119	\$100	\$89
South Central						
Transasctions	2,566	1,673	171	141	124	114
Tons	869,607	682,745	21,882	25,819	32,099	28,057
Average Price	\$179	\$208	\$106	\$112	\$121	\$93
Northeast						
Transasctions	866	435	175	130	37	85
Tons	71,596	34,988	22,289	4,973	5,722	3,501
Average Price	\$147	\$192	\$90	\$117	\$110	\$92
Southeast						
Transasctions	2,047	533	1,044	343	2	97
Tons	194,677	35,530	122,072	17,368	396	17,940
Average Price	\$129	\$187	\$106	\$132	\$38	\$62
Total Transactions						
	8,646	4,984	1,633	626	262	496

## TRANSACTIONS BY PACKAGE (Sold by the Ton)

Kansas hay is sold in several different forms. As loose ground hay, ground and extruded into pellets and then also as one of five different types of bale.

Alfalfa, ALL Qualities, ONLY Trades, ONLY per Ton				
2021 & 2022	Totals # of Trans.	Tons	Tons/ Trans.	Average Price
Large Round	1,070	435,538	407	\$175
Large Square 4x4	825	155,899	189	\$200
Large Square 3x4	1,709	352,454	206	\$205
Medium Square 3x3	265	21,097	80	\$224
Small Square	86	2,349	27	\$257
Ground	538	626,827	1,165	\$200
Pellets 15% Suncured	200	109,391	547	\$242
Pellets 17% Dehyd.	102	17,550	172	\$311
Pellets 17% Suncured	189	67,704	358	\$251
Total	4,984	1,788,809	359	



Bluestem Grass, ALL Qualities, ONLY Trades, ONLY per Ton				
2021 & 2022	Totals # of Trans.	Tons	Tons/ Trans.	Average Price
Large Round	720	71,600	99	\$87
Large Square 4x4	116	13,848	119	\$113
Large Square 3x4	460	74,352	162	\$121
Medium Square 3x3	139	5,114	37	\$128
Small Square	198	20,159	102	\$125
Totals	1,633	185,073	113	

Large square 3x4, and large round bales were the predominate packages for hay sold/ton, as together, they represented 55.8% of alfalfa transactions (44.0% of tons) and 72.3% of bluestem grass transactions (78.9% of tons). Ground alfalfa was also significant, representing 35% of alfalfa tonnage and 10.8% of transactions.

## TRANSACTIONS BY PACKAGE (Sold by the Bale)

Alfalfa, ALL Qualities, ONLY Trades, ONLY per Bale				
2021 & 2022	Totals # of Trans.	Bales	Bales/ Trans.	Average Price
Large Round	3	85	28	\$119
Large Square 4x4	8	178	22	\$3
Large Square 3x4	14	425	30	\$117
Medium Square 3x3	5	248	50	\$69
Small Square	119	3,179	27	\$14
Total	149	4,115	28	

Bluestem Grass, ALL Qualities, ONLY Trades, ONLY per Bale				
2021 & 2022	Totals # of Trans.	Bales	Bales/ Trans.	Average Price
Large Round	117	3,395	29	\$68
Large Square 4x4	3	94	31	\$61
Large Square 3x4	24	853	36	\$115
Small Square	113	2,631	23	\$8
Totals	257	6,973	27	

Small square (232) and large round bales (120) represented 352 of the 406 combined (alfalfa & bluestem grass) hay transactions.

## HAY QUALITY

Alfalfa is largely sold on a quality basis relating to multiple factors and defined in the table at right. And while hay quality testing is important, animal performance after the fact, visual appearance upon receipt of the hay, and as mentioned earlier, trust and buyer/seller relations are also key factors impacting prices paid and any alfalfa quality premiums available.

### Alfalfa Guidelines (domestic livestock use and not more than 10% grass)

USDA - AMS

Quality	ADF	NDF	RFV	TDN-100%	TDN-90%	CP
Supreme	<27	<34	>185	>62	>55.9	>22
Premium	27-29	34-36	170-185	60.5-62	54.5-55.9	20-22
Good	29-32	36-40	150-170	58-60	52.5-54.5	18-20
Fair	32-35	40-44	130-150	56-58	50.5-52.5	16-18
Utility	>35	>44	<130	<56	<50.5	<16

<https://www.ams.usda.gov/sites/default/files/media/HayQualityGuidelines.pdf>

Alfalfa Sales by QUALITY			
Alfalfa, ONLY Trades (excluding bids & asks), ONLY per Ton			
2021 & 2022	Totals		Average
	# of Trans.	Tons	Price
Supreme	974	156,393	\$240
Premium/Supreme	222	21,274	\$198
Premium	507	103,358	\$228
Good/Premium	108	10,378	\$208
Good	1,108	256,202	\$201
Fair/Good	2,020	1,234,520	\$186
Fair	44	6,534	\$157
Totals	4,983	1,788,659	

Alfalfa – The table at right deletes the combo quality categories that had fewer transactions, and likely a more niche clientele but keeping the Fair/Good category representing “grinding” alfalfa, to better illustrate the relevant alfalfa quality premiums available on a per ton basis in 2021 and 2022. Per bale alfalfa data was too thin for any analysis or reasonable conclusions.

Alfalfa Sales by QUALITY				
Alfalfa, ONLY Trades (excluding bids & asks), ONLY per Ton				
2021 & 2022	Totals		Average	Discount
	# of Trans.	Tons	Price	v. Supr.
Supreme	974	156,393	\$240	
Premium	507	103,358	\$228	-5%
Good	1,108	256,202	\$201	-16%
Fair/Good (Grinding)	2,020	1,234,520	\$186	-23%
Totals	4,609	1,750,473		

Bluestem Grass – A similar examination was conducted on per ton sales of bluestem grass, also called native or prairie hay, deleting the combo quality categories with fewer transactions. “Good” bluestem sold at a 16% discount to premium, with both fair and utility bluestem grass receiving further discounts, selling for 45% and 46% less than premium quality hay. As with alfalfa, per bale data was too thin for any analysis or reasonable conclusions.

### Grass Hay Guidelines

Quality	Crude Protein Percent
Premium	Over 13
Good	9-13
Fair	5-9
Utility	Under 5

Bluestem Grass Sales by QUALITY				
Bluestem, ONLY Trades (excluding bids & asks), ONLY per Ton				
2021 & 2022	Totals		Average	Discount
	# of Trans.	Tons	Price	v. Prem.
Premium	209	20,037	\$131	
Good	1,135	144,098	\$109	-16%
Fair	58	3,673	\$72	-45%
Utility	115	9,665	\$71	-46%
Totals	1,517	177,473		

## DELIVERED VS. F.O.B. (Free on Board)

Is there a premium for delivered hay? Clearly for any single seller to buyer transaction, delivery of the hay would logically earn a greater price than if sold F.O.B. But the comingled data as collected and reported via the MARS data management system does not bear that out.

Likely the collection of a multitude of other factors including distance, the number of “delivered transactions” vs. the number of “F.O.B. transactions,” the regionalism of hay production, the unique seller to buyer relationship, time of year, market demands, etc., in the aggregate, obscure this obvious conclusion. The table below depicts the aggregate data over the years examined.

DELIVERY vs. F.O.B.												
ALL Qualities, ONLY Trades, ONLY per Ton												
2021 & 2022	Totals		Tons/ Trans.	Average Price	Delivered # of Trans.	Percent of Tot.Trans.	Tons	Average Price	F.O.B.		Average Price	Delivered Advantage
	# of Trans.	Tons							# of Trans.	Tons		
Alfalfa(s)	5,203	1,823,222	350	\$205	1,633	31.4%	1,061,602	\$203	3,570	761,620	\$206	-\$3
Blustem Grass	1,633	185,073	113	\$106	380	23.3%	28,492	\$102	1,253	156,581	\$109	-\$7
Brome Grass	626	51,717	83	\$124	77	12.3%	2,314	\$125	549	49,405	\$123	\$2
Sudan	266	44,720	168	\$105	115	43.2%	14,277	\$120	151	30,443	\$93	\$28
Wheat	496	84,621	171	\$85	60	12.1%	5,480	\$101	436	79,141	\$83	\$18
All Else	422	70,444	167	\$118	89	21.1%	9,868	\$129	333	60,576	\$115	\$14
Total	8,646	2,259,797	261	\$124	2,354	27.2%	1,122,033	\$130	6,292	1,137,766	\$121	\$9

2021 & 2022	Percent Sold on a "Delivered" Basis	
	Transactions	Tons
Alfalfa(s)	31.4%	58.2%
Blustem Grass	23.3%	15.4%
Brome Grass	12.3%	4.5%
Sudan	43.2%	31.9%
Wheat	12.1%	6.5%
All Else	21.1%	14.0%

## A FEW OBSERVATIONS

- While representing a little over 31% of transactions, most of the alfalfa tonnage (58%) was sold on a “delivered” basis. The only forage class with over half of tonnage sold as delivered. Sudan grass too, had over 30% of both transactions and tonnage delivered.
- All other classes/hay types had smaller percentages sold on a delivered basis, thus, larger percentages sold F.O.B.