

Beef Cattle Feed Requirements

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Kansas beef producers use only a few basic beef cattle programs, but they use many modifications of these programs. This makes it somewhat difficult to state typical feed requirements for each livestock system. Some basic rations can be checked for the major systems and then substitutions can be made in the ration so long as all nutritional requirements are met.

Calculations for these have been made in accordance with the 1984 edition of *Nutrition Requirements of Beef Cattle* published by the National Academy of Sciences.

These feed requirements assume that ideal feeding conditions are prevalent and that growth stimulants are used to maximize feed efficiency. Also, the requirements assume that the cattle are ready to start gaining weight on each of these particular rations. If the cattle have been stressed or if adverse weather conditions exist, the gains as projected are too high. Producers may wish to adjust these total expected gains to better fit their particular operations.

The compositions of feedstuffs used in these rations are assumed to be average protein and energy calculated on the basis of megacals.

Table 1. *Nutrient Content of Feedstuffs Moisture-Free (DM) Basis*

Feed	DM %	NEM Mcal Per lb	NEG Mcal Per lb	TDN %	CP %	Ca. %	Phos. %	Pot. %
Corn, dry rolled	86	1.02	.70	90	9.0	.02	.35	.37
Grain sorghum, fine rolled	87	.94	.64	84	10.0	.04	.34	.40
Wheat, HRW	88	.99	.68	88	14.0	.05	.43	.49
Soybean meal, 44%	89	.93	.63	83	49.9	.33	.71	2.14
Corn silage, well-eared	33	.74	.47	70	8.1	.23	.22	.96
Sorghum silage, med. grain	30	.60	.34	60	7.2	.45	.21	1.37
Alfalfa hay, mid-bloom	88	.54	.28	56	16.0	1.31	.21	1.78
Prairie hay, late-bloom	90	.45	.20	51	5.8	.43	.15	.60
Wheat straw	90	.29	.05	41	3.6	.18	.05	.80
Animal fat, hydrolyzed	99	2.34	1.80	192	—	—	—	—
Urea	99	—	—	—	287.0	—	—	—
Wheat hay, soft dough	88	.58	.32	58	8.5	.32	.22	1.00

The following table lists the amount of feedstuff needed for various livestock systems. If a growth stimulant is not used, the amount of dry-matter feed required per pound of gain should be increased about 10 percent. This amount of feed is also the amount actually consumed by the beef animal, not including wastage.

If these figures are used to plan for the amount of feed that needs to be produced on the farm, an allowance needs to be made for shrinkage and wastage. For instance, it is not uncommon for hay and silage to shrink 20 percent by weight while in storage, due to spoilage and loss of moisture. This means that 20 to 25 percent more silage and hay than the livestock will need should be produced.

Table 2. *Feed Requirements for Various Beef Enterprises*

Enterprise	Sorghum Silage (Lbs.)	Prairie Hay (Lbs.)	Alfalfa Hay (Lbs.)	Corn (Lbs.)	Grain Sorghum (Lbs.)	Supplement ^a (Lbs.)	Wheat Pasture (Days)	Pasture (Days)	Beginning Weight (Lbs.)	Ending Weight (Lbs.)	Total Gain (Lbs.)	No. Days
Background Steers (Dry lot)	3,150	—	—	—	535	180	—	—	550	750	200	100
Background Heifers (Dry lot)	2,825	—	—	—	485	160	—	—	500	675	175	100
Finish Yearling Steers	—	—	435	1,855	1,235	110	—	—	750	1,200	450	141
Finish Yearling Heifers	—	—	375	1,590	1,060	95	—	—	675	1,050	375	132
Backgrounding and Finishing Steers	1,565	—	520	2,250	1,770	225	—	—	550	1,200	650	212
Backgrounding and Finishing Heifers	1,450	—	455	1,940	1,545	200	—	—	500	1,050	550	211
Wheat Grazing Steers	—	350	—	—	240	30	120	—	450	690	240	120
Wheat Grazing Heifers	—	350	—	—	240	30	120	—	425	640	215	120
Wheat Graze Out Steers	—	350	—	—	360	45	180	—	450	800	350	180
Wheat Graze Out Heifers	—	350	—	—	360	45	180	—	425	750	325	180
Season-Long Grazing Eastern Kansas	—	—	—	—	—	20	—	150	550	790	240	150
Early-Intensive Grazing Eastern Kansas	—	—	—	—	—	10	—	75	550	700	150	75
Season-Long Grazing Western Kansas	—	—	—	—	—	20	—	150	550	750	200	150
Early-Intensive Grazing Western Kansas	—	—	—	—	—	10	—	75	550	680	130	75
Raising Beef Replacement Heifers	—	3,840	—	1,320	—	360	—	155	550	1,100	550	535

^a *Supplements for backgrounding and finishing programs include soybean meal, vitamins, salt, minerals, and rumensin or equivalent. Supplements for wheat grazing, season-long grazing, and early-intensive grazing programs include minerals and salt.*

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