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Beef Cattle Rations : Wintering and Fattening

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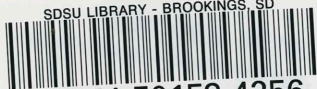
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BEEF CATTLE RATIONS

Wintering and Fattening

Every animal should be fed a ration which provides the kinds and amounts of nutrients it needs. The nutrient needs of beef breeding cows are far different from those of dairy cows, for their milk yields are much lower. Generally beef cows may be wintered entirely on roughage, if it is of fairly good quality and if enough legume forage is fed to meet their limited needs for protein.

When calves or yearlings are being carried through the winter to be fattened later, they may likewise be fed entirely or chiefly on roughage, if it is of good quality.

The requirements for fattening cattle are much different from those for breeding cows or for wintering young stock. To enable fattening cattle to make rapid gains, they must receive rations rich in digestible nutrients and net energy. A liberal amount of grain is generally fed to cattle being fattened in dry lot. Unless this is done, they will make less rapid gains and will not reach as good a finish. Especially with calves and yearlings, good gains cannot be expected unless the ration provides ample protein and vitamins.

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Agricultural Extension Service
 South Dakota State College
 U. S. Dept. of Agriculture, Cooperating

The Authors

Preparing this leaflet were James J. O'Connell and LaVerne J. Kortan, extension animal husbandmen, and Lawrence B. Embry, experiment station animal husbandman. Questions regarding this and other subjects pertaining to livestock may be directed to the Animal Husbandry Department, South Dakota State College, College Station, Brookings, S. D.

Mineral Requirements

Mineral requirements should be considered along with balanced rations. They do play an important function, especially in pregnant animals. As a rule, complex mineral mixtures are not required and the following mixtures should prove adequate.

1. Recommended when feeding a ration made largely of good quality roughage or when on good pasture.

Bone meal — 3 parts

Salt — 1 part (Added salt free access)

2. Recommended when feeding a ration made largely of low quality roughages and for winter grazing.

Bone meal — 3 parts

Salt — 2 parts (No additional salt necessary)

3. Recommended with fattening rations.

Bone meal — 3 parts

Limestone — 1 part

Salt — 1 part (Additional salt free access)

Breeding stock should receive iodized salt. Cobalt appears to be low in some non-legume forages. Trace mineralized salt will supply both iodine and cobalt.

Table 1. *Average Amounts of Feed Consumed by Full-Fed Cattle During Different Parts of the Feeding Period

Quarter of Feeding Period	Feed per 100 Pounds Live Weight Total		
	Air-Dry Feed (pounds)	Grain (pounds)	Air-Dry Roughage (pounds)
1. First	2.7	1.5	1.2
2. Second	2.5	1.7	0.8
3. Third	2.3	1.6	0.7
4. Last	2.1	1.5	0.6
Average for entire period	2.4	1.6	0.8

*Average length of feeding period: 2-year-old steers, 150 days; yearlings, 200 days; calves, 250 days.

Table 2. Suggested Schedule of Grain Feeding to Get Cattle Safely on a Full Feed

Day	Shelled Corn (lb.)	2-Year-Olds Av. Weight (lb.)	Corn per 100 (lb.)	Shelled Corn (lb.)	Yearlings Av. Weight (lb.)	Corn per 100 (lb.)	Shelled Corn (lb.)	Calves Av. Weight (lb.)	Corn per 100 (lb.)
1	1	900		1	700		1	425	
2	2			2			2		
3	3			3			3		
4	4			4			4		
5	5			5			4		
6	6			6			4		
7	7			7			4.25		
8	8			7			4.25		
9	9			7			4.25		
10	9	930	0.97	7.50	725	1.0	4.50	450	1.0
11	9			7.50			4.50		
12	10			7.50			4.50		
13	10			8			4.75		
14	10			8			4.75		
15	11			8			4.75		
16	11			8.50			5		
17	11			8.50			5		
18	12			8.50			5		
19	12			9			5.25		
20	12			9			5.25		
21	13			9			5.25		
22	13	960	1.35	10.50	750	1.40	5.50	465	1.2

Table 3. Wintering or Fattening with Legume Hay or Mixed Hay

	Alfalfa Hay (lbs.)	Legume-Grass 1/3 to 1/2 Legume (lbs.)	Good Quality Non-Legume or Prairie Hay (lbs.)	Protein (lbs.)	Corn or Cob Meal (lbs.)
Wintering 400 lbs* beef calves to gain .75 to 1 lb. daily	12-15	12-15	10-14 8-12 8	1.5	2
Wintering 700 lb.* yearling to gain 1/2 to 3/4 per day	14-18	15-20	18-20 10-12 10	1.5	3
Wintering mature* beef breeding cow in calf	16-25	16-25	10 20-25	.75-1.0	
Fattening 500 lb. calves	4-5	4-5	4-5	1.0-1.5 1.5-2.0 1.5-2.0	9-12 9-12 9-12
Fattening 1000 lb. cattle to gain 2 1/4 lbs. per day	7.0	7.0	7.0	1-1.5 1.5-2.0	14-18 14-18 14-18

*Good quality sorghum fodder may be substituted for the non-legume hay, and the grain eliminated in the wintering rations if the sorghum has a fair amount of grain in the heads.

Table 4. Approximate Ratio of Grain to Roughage at Different Stages of the Feeding Period

Feeding Period	Ratio of Grain to Roughage (Air-Dry Basis)			
	Large Amount of Roughage Available	Amount of Roughage Limited	Long Feeding Period (Over 200 Days)	Short Feeding Period (Approx. 90 Days)
1st third	1 : 4	1 : 1	2 : 3	2 : 1
2nd third	2 : 3	3 : 1	3 : 2	3 : 1
Last third	3 : 2	4 : 1	3 : 1	5 : 1
Average for Entire Period	2 : 3	5 : 2	3 : 2	3 : 1

Table 5. Amounts of Feeds Required for Various Amounts of Grain With Different Feeding Programs

Kind of Cattle in the Feed Lot	To gain Lbs.	Corn Bu.	Mostly Drylot Feeding			
			Protein Feed Lbs.	Hay Lbs.	Pasture Days	Months on Farm
Good to choice 2 yr. 880 lbs.	320	49	170	1100	28	6
Common to medium 2 yr. 860 lbs.	260	33	140	1100	20	5
Good to choice short-fed yearling 670 lbs.	370	50	200	1200	30	7
Good to choice long-fed yearling 600 lbs.	490	64	240	1400	42	10
Common to medium long-fed yearling 660 lbs.	300	37	150	1300	40	6 1/2
Good to choice steer calves 440 lbs.	560	63	260	1400	36	11
Good to choice heifers 420 lbs.	390	44	200	1200	16	9

From Bulletin P99, Iowa State College, Ames, Iowa, May 1949.

Table 6. Feeding Silage

	Corn Silage or Sorghum Silage Pounds	Grass, Legume or Small Gains Pounds	Legume or Mixed Hay Pounds	Protein Pounds	Corn and Cob Meal Pounds
Wintering 400 lb. beef calves to gain .75 to 1 lb. daily	25	*		1	1
	8	30		.5	2
		10	5	1	
Wintering 700 lb. yearling to gain 1/2 to 3/4 lb. per day	40		4	1	
	20	50	7		
		25	7		
Fattening 500 lb. calves	8		1	1.5	10
		10	1	1.5	10
Fattening 1000 lb. cattle	30			1.5	15
		35		1.0	17
	20		4	1.5	15
Wintering mature beef breeding cows in calf	50-60			1	
	25-40	55			
		35	5-7		
			7-8		

*In extremely cold weather when large amounts of silage, especially grass silage are fed, enough nutrients may not be furnished to meet the increased body requirements (heat and energy). Additional grain may be supplied to meet the increased body requirements.
 †Mixtures of any farm grains would give about the same results.

Table 7. Suggested Uses of Low Quality Roughages

	Alfalfa Hay	Corn or Sorghum Silage	Grass Silage	Low-Quality Late-Cut Prairie Hay*	Corn Cobs or Cereal Straw	Grain	High Protein Supplement
Wintering 400 lb. beef calves to gain .75 to 1.0 lb. daily	6			6			
				10			2
			12	5		2	
Wintering 700 lb. yearlings to gain .5 to .75 lb. daily	7				4		
				8			
			20	7		2	2
Wintering mature pregnant beef cows	9				6		
	8			18	12		2
	6			14			
	4	30			5		1
		40			5		
			25		10	2	
			15	14		2	

*Winter grazing should be supplemented in about the same manner as late cut prairie hay. Tables 1-2-3 taken from "Beef Cattle" by Roscoe R. Snapp. 4th Edition, John Wiley and Son Inc., New York.

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