



A Feed-Planning Guide For Wintering Beef Cattle

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Adequate nutrition is necessary to maximize genetic potential and minimize disease and health problems in your beef herd.

A successful cattle feeding program requires:

1. Knowing the daily nutrient requirements of beef cattle according to weight and class.
2. Knowing the amount of roughage, feed grains and pasture you have on hand.
3. Buying or providing feed that will meet the animal's nutrient requirements at the least cost.
4. Getting adequate consumption levels so the daily nutrient requirements are met.

To use this publication effectively, you should follow these steps:

1. Determine the nutrient requirements of the cattle to be fed (Table 1).
2. Complete a feed inventory (Table 2).
3. Obtain a feed analysis.
4. Determine the total amount of feed required (Tables 3 and 4).
5. Compare current and projected feed prices (hay and grain, minerals and protein supplement).

Nutrient Requirements

Table 1 lists the nutrient requirements for wintering some of the common classes of beef cattle according to the 1976 Nutrient Requirements Council (NRC).

Feed Inventories

Feed inventories will tell you how much feed you have on hand and how much you will need to pur-

chase. Start making the inventory before the first cutting of hay or grain and before you purchase any feed. Complete it by the time the last cutting of hay is in the stack and grain harvest is finished. Table 2 can be used to complete the inventory.

Feed Requirements

Winter feeding periods will vary from ranch to ranch depending on location and season of calving. Fall-calving cows will need more feed than those calved in the spring since they will be lactating during the winter months. The 60 days just before calving and the 60 days immediately after calving are the cow's most critical feeding periods. You can use Table 3 to estimate total feed required for number of animals on hand.

Feed Analysis

There is no substitute for a feed analysis to determine the nutritional value of a feedstuff. Have feeds analyzed for dry matter, energy, protein, calcium and phosphorus. A feed analysis used correctly will help you prevent overfeeding or underfeeding important nutrients. Private laboratories and feed dealers offer feed analysis services. County Extension Agents, private consultants and feed dealers can help you with livestock nutrition recommendations.

Energy and protein are the two most important nutrients to consider in rations for dry, pregnant or lactating beef cows. These nutrients will probably be lacking in poor-quality forage and roughages. Phosphorus is also normally deficient in poor-quality roughages.

Table 1. Daily nutrient requirements of different classes of beef cattle.*

Class of cattle	Dry matter consumption (DM)	Total digestible nutrients (TDN)	Crude protein (CP)	Calcium (Ca)	Phosphorus (P)	Roughage
	(lb.)	(lb.)	(lb.)	(lb.)	(lb.)	(%)
Growing steer calves 450 lb. (1 to 1.5 lb. gain)	14	8	1.4	.05	.03	70-80
Finishing steer calves 650 lb. (2.4 lb. gain)	22	11	2.0	.04	.03	20-25
Wintering 1,000 lb. pregnant mature cows	16-20	10	1.0	.03	.03	100
Nursing 1,000 lb. cows	20-27	13.5	1.8	.06	.05	100
Replacement heifer calves 450 lb. (2 lb. gain)	14	8	1.4	.05	.03	34-45
Maintaining 2,000 lb. bulls	30	13.7	2.4	.04	.04	100

*Nutrient requirements of beef cattle on an as-fed basis. This table assumes the feed contains 90% DM and that 10% of the feed is lost during feeding.

Calcium and phosphorus are the two minerals you should be most concerned about during the wintering period. The relationship of one to the other is as important as the amount consumed. A ratio of 2 parts calcium to 1 part phosphorus in the diet is recommended.

Formulating A Ration

You can use this step-by-step approach to formulating a ration for your beef cattle, using either a feed analysis or book values for dry matter, TDN (energy), calcium, phosphorus and protein:

- Multiply the percent DM of the hay times amount of hay fed.
25 lb. hay x 90% DM = 22.5 lb. DM
- Multiply estimated percent lost during feeding times pounds of DM.
22.5 lb. DM x 10% = 2.25 lb. feed lost during feeding

Table 2. Feed inventory. List in tons or AUM's.*

	Carry over in storage	Harvested current year	Total on hand
Hay	_____	_____	_____
Straw	_____	_____	_____
Feed grain	_____	_____	_____
Pasture (AUM)	_____	_____	_____
Total tons	+ _____	_____	_____

*AUM = Animal Unit Month - the amount of feed and/or forage required to support an animal 30 days; one 1,000 pound cow is equal to 1 AUM.

Table 3. Estimated feed requirements for wintering beef animals.*

	Hay (ton)	Feed grain (ton)	Pasture (AUM's)
1. 60 days before calving (Number 1,000 lb. cows x 20 lb. hay x 60 days)	_____	_____	_____
2. 60 days after calving (Number 1,000 lb. cow x 27 lb. hay x 60 days)	_____	_____	_____
3. 60 days after calving (Number 1st calf heifers x 23 lb. hay x 60 days)	_____	_____	_____
4. Number weaned calves x 12 lb. hay x days Number weaned calves x ___ lb. grain x days	_____	_____	_____
5. Number of replacement heifers x 6 lb. hay x days Number of replacement heifers x ___ lb. grain x days	_____	_____	_____
6. Number of yearling calves x 9 lb. hay x days Number of yearling calves x ___ lb. grain x days	_____	_____	_____
7. Number of yearling bulls x ___ lb. hay x days Number of yearling bulls x ___ lb. grain x days	_____	_____	_____
8. Number of mature bulls x 30 lb. hay x days Number of mature bulls x ___ lb. grain x days	_____	_____	_____
9. Total feed required	_____	_____	_____

*The given requirements assume a hay analysis of 50% TDN, 12% CP, 90% DM and 10% lost during feeding.

3. Total DM minus percent lost during feeding equals DM actually available.
 $22.50 - 2.25 = 20.25$ lb. feed DM available
4. For TDN (energy), multiply percent TDN times pound of DM available.
 20.25 lb. DM x 50% TDN = 10.12 lb. TDN (energy)
5. For crude protein (CP), multiply percent CP times pound of DM available.
 20.25 lb. DM x 12% CP = 2.43 lb. CP
6. For calcium, multiply percent Ca times pound of DM available.
 20.25 lb. DM x 1.46% Ca = .295 lb. Ca
7. For phosphorus multiply percent P times pound DM available.
 20.25 lb. DM x 22% P = .0045 lb. P

Enter these values on "Amount Fed" line, Table 4, and subtract the amount fed from feed requirements. Then either increase or decrease the amount of feed fed according to difference. Pay attention particularly to the possible need for more TDN (energy), mineral or protein in the ration.

Table 4. Ration for 1,000-pound nursing beef cow.

	DM	TDN	CP	Ca	P
	(lb.)	(lb.)	(lb.)	(lb.)	(lb.)
Animal requirements (from Table 1)	20-27	13.5	1.8	.06	.05
Amount fed (from calculations)	22.5	10.12	2.4	.295	.0445
Difference	—	3.42	+6	+235	-.005

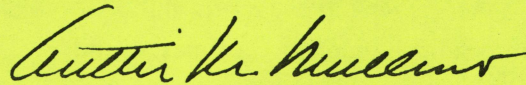
For Additional Information

Other references that will help you plan a winter feeding program are CIS 348 - Buying and Selling Alfalfa Hay, Corn Silage and Barley, and CIS 499 - A Feed-Pricing Guide for Wintering Beef Cattle. These publications can be obtained from University of Idaho Cooperative Extension Service offices.

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